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SYRUPUS PRUNI VIRGINIANÆ (ACETOUS).

By Joseph P. Remington.

Syrup of wild cherry has long been one of the favorite vehicles not only for the administration of active remedies, but on account of its agreeable taste; it is often used *per se* for allaying slight bronchial irritation. Pharmaceutically no great difficulty has ever been experienced in making a good syrup, but the presence of tannin in considerable quantity has created much difficulty in making a permanent fluid extract, which possesses all of the valuable constituents and a minimum of the undesirable principles. In the series of experiments undertaken to prove the value of acetic acid as a menstruum, fluid acetract of wild cherry was made, and in the course of collateral investigations to show its miscibility with water, glycerin and syrup, the idea of using very dilute acetic acid for the infusion to be made into the syrup suggested itself, and the following formula is proposed:

	Metric.	Old Form.
Wild cherry, No. 20 powder	150 gm.	5 oz., av.
Sugar	700 gm.	25 oz., av.
Glycerin	150 c.c.	5 fl. oz.
Diluted acetic acid, U.S.P., sufficient to make	1,000 c.c.	34 fl. oz.

Moisten the wild cherry with 50 c.c. (or 1½ fluid ounces old form) of the diluted acetic acid, and macerate for twenty-four hours in a close glass or earthenware vessel, then pack it firmly in a cylindrical non-metallic percolator. Percolate the wild cherry with diluted acetic acid until 450 c.c. (or 15 fluid ounces old form) of liquid is obtained. In this dissolve the sugar by agitation without

the use of heat, strain, and pass enough diluted acetic acid through the strainer to make the product measure 1,000 c.c. (34 fluid ounces old form).

The quantity of acetic acid may be reduced if necessary by using for a menstruum, equal quantities of diluted acetic acid and water.

The syrup thus made is light reddish-brown in color, has the characteristic peach kernel flavor, with a decidedly agreeable, acidulous taste, with the astringency greatly modified. Hydrocyanic acid is present, the acetic acid not interfering with its generation. The glycerin, it will be observed, is not added to the menstruum, but is placed in the receiving vessel; this prevents the decomposition of the infusion, which rapidly occurs when a solely aqueous menstruum is used; in addition to this less tannin is found in the product, for, as is well known, glycerin is the best solvent for tannin.

AN INVESTIGATION INTO "HUSA," AN ASSERTED PLANT PREPARATION TO CURE THE OPIUM HABIT.[1]

By Prof. John Uri Lloyd.

In February, 1898, *The Texas Courier-Record of Medicine*, p. 195, in the leading article, under the head, "Practice of Medicine," published a paper by W. W. Winthrop, A.M., M.D., Fort Worth, Tex., titled, "Singular Discovery of a New Florida Plant, that is an Antidote for Snake Poison, and a Cure for the Opium and Morphine Habits."

This paper is not suitable for condensation, and is too long for reproduction.

In substance, the author states that in Florida he found a negro who had a secret antidote to poisonous reptile bites. This negro would allow two immense rattlesnakes to bite him with impunity. To use "Dr. Winthrop's" words, "These snakes he would irritate any number of times a day and allow to bite him on the hand, arm, breast or any place indicated. This I saw frequently and investigated. After each bite he would take a mouthful of some herbs which he carried in a little bag, he claiming that these herbs counteracted the effects of the bites, which they evidently did."

[1] Read at the joint meeting of the Cincinnati Section of the American Chemical Society and the Cincinnati Academy of Pharmacy, University of Cincinnati, March 15, 1899.

Naturally, the author endeavored to identify these "herbs," but the negro refused to divulge his secret. He then made the negro drunk and learned that, "Boss, de is viellies an' husen, an' I gets 'em from de Semmes in de dales," which the author interpreted as "Seminole Indians who live in the everglades." At once he started for the everglades, but found that "I could elicit nothing from the Indians, men or women." None would give up the valuable secret. Then came a friend in need in the form of a remarkable naturalist from Scotland who supplied the missing information, the event being chronicled as follows:

"Just as I was about to give up the matter in disgust I met a Dr. McGregor, a Scotchman, from the University of Aberdeen, Scotland, who has spent many years in Florida and along the Gulf coasts. He was gathering orchids and other plants for his university or museum. From him I learned all I wanted to know. 'Viellies an' huser,' as translated by him, means the spear-eared violet, *Viola sagittata*, 'huser' is husa, so-called by the Indians, sometimes hoosu; the whites call it yousa and yusee."

Proceeding, the author (Dr. Winthrop) informs us that "The *Viola sagittata* has long been known as possessing antidotal properties for snake poison. The eclectic school of medicine use it for many purposes. Husa, however, is not much known. It is an unclassified plant of a dirty whitish-green color, about 2 or 3 inches long. It has at its summit a ball-like white formation. Where the flower should be this is hard, slightly lobulated, and is to all appearances like a small cauliflower. It grows in clumps, in moist, shady places, particularly on the hammocks at the roots of the cabbage palms. It is of a low order of plants, above the mosses; it is, I believe, a cryptogam."

Thus it appears that this mixture of herbs that the negro used was (Winthrop) a mixture of two plants, one (*viola sagittata*) long, according to the author, known to eclectic medicine, the other (husa), *unclassified*. But, while the first of these was, according to the author, used by the eclectics in snake bite, etc., the second, *unknown to science*, was a remarkable cure for the morphine habit. This is asserted as follows: "From Dr. McGregor I learned that it is a perfect antidote for all snake bites, stings of insects, etc., also an antidote for narcotic poisons. It is the most diffusible

stimulant known, acting immediately. It is, owing to these two last-mentioned properties, that it has been found to be so efficient a remedy for the opium habit. I have tested it beyond question, and in every case, without one single exception, it is found to be a perfect cure. It takes the place of opium or morphine. Supporting the patient fully, it is sedative but not narcotic. It produces slight elation, but no somnolent effect. To use the illustration of one physician who cured himself of the opium habit with it, a habit of twenty-three years' standing, and using 40 grains sulph. morph. daily, 'It makes a man feel just as easy and comfortable as one feels after a satisfying meal.' As soon as I learned its properties, I sent some of the husa plant to several doctors I knew who used morphine; they one and all pronounced it 'a perfect success.' I have never known of a failure when the patient wanted to be cured. In the hands of a careful physician this remedy will be found efficient in the worst cases of drug addiction. * * * With husa, physicians can cure their patients addicted to the use of opium, morphine, etc., instead of letting them get into the hands of quacks."

The paper ends with the statement that "Any physician interested in this matter will find me willing at all times to give him all the information I possess on the subject."

Soon following this came a leading editorial in *The New York Medical Journal* (April 16th, p. 538, 1898), based on the foregoing paper from *The Texas-Courier Record*, in which the editor finally remarked that "It is to be hoped that the botanists will give us some information about 'Husa,' and that its medicinal virtues may be inquired into systematically." Succeeding this, *The New York Medical Journal*, June 25, 1898, gave place to a personal contribution from Dr. Winthrop, who added as follows:

"It has an acrid taste when chewed in a recent state. The tincture, according to its strength, is a diffusive stimulant, causing a gentle excitement to pervade the entire system, making one inclined to talk, laugh and 'have fun.' The active principle, husin, consists of white, very light flocculent, minute crystals which agglomerate into lumps when exposed to the air. It is poisonous as atropine or strychnine, $\frac{1}{40}$ of a grain causing violent beating of the heart, as though it would pump itself through the thorax. The blood rushes through the blood vessels with a resilient sweep that can be fol-

lowed; everything seems to sweep along in great undulating cycles. Nothing is stationary. One seems to get a view and a grasp of vast forces of nature sweeping, rushing, tumbling like billows or vast cloud masses from some immense power or force that seems to stand and judge. The person says to himself: 'It seems as though this was not new. I have seen all this before.' The mind seems to dominate all this. After this stage subsides, which it does slowly, then quiet and languor supervene; the skin is moist, and every muscle soft and relaxed, then comes a quiet sleep."

Following the conspicuity given "Husa" by such exceptionally responsible professional authorities as the above-named journals, came reproductions of the papers in full or in part, in various medical journals, together, even with editorial comments as well, this too, in the most reputable medical journals of America. From these commendations, the wonders of "Husa" spread into pharmaceutical print, and not a few of our own professional journals were inveigled into giving both Husa and its discoverer charming notices and excellent advertisements. At last the fame of Husa crept across the ocean, and now we find that our European friends are giving voice to the claims of the wonderful American discovery, a Florida plant, that is a specific for the opium habit.

Naturally, this conspicuity brought orders for Husa to dealers in American drugs and plant products. However, such a thing as "Husa" being unknown in trade, the Lloyd Library was asked to give its habitat and description. And lastly, since "Dr. Winthrop" used the name *eclectic* in connection with his wonderful discovery, it was natural that from the study I have made of eclectic medicines, I should be importuned, both by pharmacists and by physicians, for information on this subject. This accounts largely for the interest I exhibit in bringing "Husa" before this Society. I have before me a mass of correspondence on this subject, which I shall answer as follows:

In the first place, *Viola sagittata* is not used in eclectic medicine. It was introduced by Dr. John Fothergill, under the common name arrow-leaved violet, in 1775. It was first on record under its botanical name in Aiton, Hortus Kewensis, 1789, Vol. III, p. 287. It is not to be found in King's American Dispensatory, nor in Scudder, Webster, Watkins, Ellingwood, nor in any other authority of that school, and I have never known an eclectic physician to use

it. In the second place, the description "Dr. Winthrop" gives of the plant "Husa," corresponds somewhat to *Monotropa uniflora* (Indian pipe), a very well known plant (if it refers to any known plant), but as this "fit plant" is recommended in eclectic literature (see King's American Dispensatory, p. 606) as a substitute for opium, it could not be Husa, which Dr. Winthrop asserts is unknown and unclassified.[2] In the third place, I shall take exception to the professional form of the following statement, that "Dr. Winthrop" sends in circular letter to physicians who apply to him for "Husa." I have too much confidence in American naturalists to believe that any drug unknown to botanists is found and gathered by the boat-load by "two plume bird hunters." But I can best let the circular letter, to which I take exception, speak.

"As far as now known, Husa is found only in the everglades of Florida. This is a tropical wilderness. Vast stretches of stagnant tepid water, teeming with low forms of life, poisonous insects, mosquitoes, sand flies, tarantulas, centipedes, saurians of all kinds and poisonous serpents abound on every side. A dense jungle, matted vines, canes, saw grass, palms, strange fungi, rare orchids, a rich but little known flora. No roads, paths or trails—the compass the only guide, it is safe only for the experienced woodsman. Under such conditions it is extremely difficult to hire anyone to gather herbs in these glades, where, as they say, 'there is a snake under every bush.' No manufacturer has as yet been found to conquer these difficulties and give this remedy to the profession. I am entirely dependent for the little I get to two plume bird hunters, who hunt in the glades. I have to be satisfied with what they see fit to collect and charge what they please; it is this or nothing. Besides the above difficulties, there is no way of getting the herbs out of the glades, except in an open boat or skiff—then if the plants get wet or bruised or detained on the way, they are not fit to use. Sometimes a load costing $25 has to be thrown away, not being fit for tincture or extract. Owing to these causes, it costs me from 25 cents to 40 cents an ounce in tincture, and at no time have I ever had as much as 10 gallons at one time. I have let physicians have it at about cost. Only physicians have had it from me. I have never had any for the laity at any price. All my knowledge of the plant and its uses have been derived exclusively from medical men."

[2] Mr. C. G. Lloyd states that *Monotropa uniflora* grows in abundance in sections of Florida where he has botanized.

It may interest the journalists who have, in my opinion, indiscreetly advertised "Husa" herb as a cure for the opium habit, to know that when "Dr. Winthrop" was written to by their professional readers, he refused to supply any herb whatever, returning the money, and writing to the following effect, which is the reply given one physician:

"Respectfully returned with reply, that I never send plants, it is impractical. They do not bear transportation well. I have to have extract made in Florida, and then diluted into three degrees of tincture for prescription. Plants would be of no use to you, or even crude extract. The action of Husa is peculiar—it is the most diffusible stimulant known."

But, as this experience (which agrees with all other attempts to get the drug) is enough to illustrate that "Husa" herb cannot be obtained for identification, I shall drop that phase of the matter and give the result of my researches concerning the preparation sold as "a tincture made from eight ounces of herbs to one pint of alcohol," but which was evidently graded up and down in the case. I will add that no difficulty whatever is experienced in getting this liquid; $10 for thirty fluidounces, notwithstanding the rarity of the herb.

A responsible physician sent "Dr. Winthrop" $10, receiving therefor a regulation supply which he used according to instructions, with a patient subject to the opium habit. At my request, he sent another $10 and received another month's supply, which was sent to me unopened, with an affidavit to the effect that it had not been touched by him, simply addressed in the express office to me. On opening the box, I found ten 3-ounce vials numbered with printed labels from 1 to 10 successively. On each label was the physician's name, and the words *One Month* and the word *Poison*, nothing else; not even the famed name "Husa."

The letter accompanying the box contained a four-page circular, in which occurs the statement that "Husa is not narcotic." In addition, I take from this circular of "Directions" as follows:

"Stop at once your opiate, and under no circumstances take morphia, opium or any narcotic drug treatment, as ever so small a dose would interfere with your otherwise certain cure. Narcotics and Husa are physiological opposites, and even dangerous symptoms might ensue from taking them together. At no time during treatment will you feel like taking opiates; in fact, the remedy will

support you more satisfactorily without the heavy, deadening effects, and you will be better able to attend to your duties than while taking opiates.

"Sleep all you can. Undisturbed sleep, peaceful rest, is the best nerve tonic; in fact, the best medicine; avoid all prescriptions of proprietary medicine, etc., that might contain opium in some form.

"If these directions are strictly adhered to, if you totally abstain from opiates during treatment and otherwise properly take the remedy, you will be absolutely certain of an easy, permanent cure."

The vials contained liquids of one uniform brown red color, such as burnt sugar imparts to water. Preliminary tests made on a specimen of Husa (No. 8), obtained previously, had demonstrated that its contents were: Morphine, approximately, 1·3 per cent.; salicylic acid, ·16 per cent.; alcohol, 12 per cent.; glycerine, 10 per cent.; water, q. s., and coloring matter. The morphine was as sulphate. Systematic assays were then instituted with the ten vials to determine the morphine strength of the various liquids. The result is as follows:

Twenty-five c.c. of each liquid were evaporated to about 5 c.c. and then brought to the measure of 10 c.c. with water. To the product were added 3 c.c. of alcohol; 6 c.c. of ether and 1 c.c. of ammonia (10 per cent.). The mixture was shaken frequently until all the morphine was separated, when it was washed and weighed in the usual manner (U.S.P. process).

Result.—No. 1 contained 2·19 per cent. morphine; No. 2, 1·98 per cent. morphine; No. 3, 1·95 per cent. morphine; No. 4, 1·72 per cent. morphine; No. 5, 1·55 per cent. morphine; No. 6, 1·46 per cent. morphine; No. 7, 1·59 per cent. morphine; No. 8, 1·59 per cent. morphine; No. 9, 1·43 per cent. morphine; No. 10, 1·33 per cent. morphine.

Accompanying I exhibit in separate bottles, the morphine obtained labeled from 1 to 10 successively, also the sulphuric acid as barium sulphate and the glycerine and salicylic acid from the preliminary examination. It will be observed that the morphine is of a pure white, a condition quite different from morphine obtained from opium by the assay process, for then it has a yellowish color. The fact that it is so pure indicates, also, that it is *added morphine*, and that it is not in actual combination. The morphine obtained

conformed to all the reactions demanded by the United States Pharmacopœia, and, in addition, to the potassium iodate test, as well as Mayer's alkaloidal test.

To sum up, *Viola sagittata* is not an eclectic remedy, for the reason that the name does not occur in eclectic literature, and the drug is not employed by eclectics. "Husa" is said by "Dr. Winthrop" to be an undetermined plant (unknown to science), found by two plume bird hunters and gathered by them by the boat-load. My investigation of "Husa," as sold by its discoverer to his professional patrons, is to the effect that "Husa" is a liquid containing large amounts of sulphate of morphine, some salicylic acid, some alcohol, water, glycerine and coloring-matter, probably burnt sugar.

The discoverer of this wonderful antidote to the morphine habit asserts that a multitude of physicians are availing themselves of "Husa" as a substitute for morphine and opium in the treatment of victims addicted to the opium habit. This I believe fully, judging from the extensive advertising "Husa" has received by the grace of the editorial and reading columns of the American medical press, and judging from the high price charged for the morphine, I would fain believe that the term "victim" should not be restricted to the consumer of "Husa."

I would define "Husa" as follows: A solution of sulphate of morphine to be administered under the name "Husa," and only by physicians. It is sold to physicians at the rate of $10 for about 234 grains of morphine. In support of this view, I offer the foregoing testimony and submit herewith the morphine obtained from 25 c.c. of each liquid. Until I am furnished with a new plant containing morphine to the extent found in these experiments, I shall accept that "Husa" is a concoction.

In conclusion, I take pleasure in extending thanks to Dr. Sigmond Waldbott for laboratory assistance, and to the physician who obtained for me the "Husa" preparation from "Dr. Winthrop."

JAPAN WAX AS A SUBSTITUTE FOR BEESWAX IN THE OFFICIAL OINTMENTS AND CERATES.

By Robt. C. Pursel.

With the progress of pharmacy, new products are being continually brought forward which may have new properties or which may be used to replace products already in use. On account of the

peculiar nature of the ointments, many efforts have been made to introduce products which would add to the permanency of their keeping qualities.

Of recent years Japan wax is an important article of commerce, and it was while examining a lot of several carloads some time ago that the thought occurred to me, why cannot it be used pharmaceutically?

My experience in examining Japan wax has been that in no case have I found any that was adulterated. A case of adulteration with starch was reported by La Wall (AMER. JOUR. PHARM., November, 1896), but this can be so easily detected by the simple iodine test, that parties who seek for pecuniary gains by pursuing such methods have yet to discover an adulterant that is not easily detected, and at the same time cheaper than Japan wax, whereby they can successfully accomplish their purpose.

On the other hand, I have found beeswax to be very often adulterated. In some cases the amount of foreign matter is so small, that I am led to believe it is due to the careless manner in which it is prepared for market. The worst case of adulteration that I encountered was one which was labelled Pure Country Beeswax, and upon examination proved to contain about 25 per cent. of pure beeswax, the balance being paraffin and stearic acid. Recently another sample was examined which contained about 50 per cent. of tallow, having a melting-point of about 50° C.

Druggists not infrequently purchase their supply of beeswax from the producer, and not having the time and facilities for examining it as to its purity, make their ointments and cerates from the same, unconscious that probably they have been buying tallow, paraffin, etc., at an advanced price.

Another item in favor of Japan wax is its cost, it being worth about one-fourth as much as pure beeswax. This is of great importance to the average druggist, and one that should not be overlooked. Japan wax has a melting-point of about 53° C., but, notwithstanding this fact, it is more firm and less plastic than beeswax, hence a much less quantity is required to give an ointment or a cerate the desired consistence. In some cases I have found that 40 per cent. less Japan wax than beeswax can be used, and yet the product will have a consistence conforming to the U.S.P. requirements.

About a year ago I made a few of the official ointments that are

used the most, *i. e.*, simple ointment, oxide zinc ointment and ointment of rose-water, using Japan wax instead of beeswax, at the same time making the same ointments, respectively, according to the U.S.P.

Soon afterwards I made the six official cerates, using Japan wax instead of white wax, also making a sample of each, according to the U.S.P. This was done in both cases to compare their keeping qualities. They were stored in a cool place in the cellar, and were not disturbed, save a casual visit, for nearly one year. Recently they were taken out, and all were found to be in good condition except the cold cream and cantharides cerate; both samples of cold cream were slightly yellowish in color on the surface. The samples of cantharides cerate were covered with mould, which is liable to result if kept too long. As no druggist makes a sufficient stock of these cerates to last a year, these difficulties could be overcome by making fresh stock from time to time.

In making simple ointment with Japan wax the following formula was used:

Lard	85 grammes.
Japan Wax	15 "

This compared favorably with the U.S.P. product, both in appearance (save color) and consistence. As Japan wax is nearly colorless, the products wherein it is employed differ radically in color from those made by using yellow wax.

Benzoinated lard being used as the base in the oxide of zinc ointment, a sample was made in which the following proportions were used:

FORMULA NO. 1.

Benzoinated Lard	97 grammes.
Japan Wax	3 "

This quantity of Japan wax proved to be sufficient to give the benzoinated lard the desired consistence during the warmest weather.

The oxide of zinc ointment was then made using benzoinated lard made with Japan wax, according to the following formula:

FORMULA NO. 1.

Zinc Oxide	20 grammes.
Benzoinated Lard	80 "

This compared favorably with the U.S.P. product in all respects, no granulation was noticeable, but after standing about three months granulation did take place, as it did also in the U.S.P. product, although to a less extent.

A sample of oxide of zinc ointment was recently made according to the above formula. The benzoinated lard, however, being made according to the following formula:

FORMULA NO. 2.

Benzoinated Lard	96 grammes.
White Wax	1·50 "
Japan Wax	2·50 "

This gave a product almost identical with the one prepared by using benzoinated lard made according to Formula No. 1.

In making cold cream the following formula was used:

FORMULA NO. 1.

Spermaceti	12·5 grammes.
Japan Wax	10·0 "
Expressed Oil of Almond	62·0 c.c.
Stronger Rose-Water	19·0 "
Sodium Borate	0·5 grammes.

This gave a product which compared favorably with the official ointment except in color which was slightly darker.

A second sample was made according to the following formula:

FORMULA NO. 2.

Japan Wax	22·5 grammes.
Expressed Oil of Almond	62· c.c.
Stronger Rose-Water	19· "
Sodium Borate	0·5 grammes.

The consistence of this was a trifle too hard, but the color compared favorably with sample No. 1.

Tar ointment was made according to the following formula:

FORMULA NO. 1.

Tar	50 grammes.
Japan wax	10 "
Lard	40 "

This gave a product comparing well with the U.S.P. ointment, it being however lighter in color.

A second sample was made, using the following formula:

FORMULA NO. 2.

Tar	50 grammes.
Yellow wax	5 "
Japan wax	5 "
Lard	40 "

This formula gave a product almost identical with the U.S.P. product both in general appearance and color.

Several of the ointments which are made by incorporation by using benzoinated lard as a base (the benzoinated lard was made according to Formula No. 1), were made, and the results were very gratifying.

In making simple cerate the following proportions were used:

Japan wax	20 grammes.
Lard	80 "

The consistence of this product was similar to the one prepared according to the U.S.P. directions, the color being about a shade darker.

The following formula was used in preparing camphor cerate:

Camphor liniment	10 grammes.
Japan wax	20 "
Lard	70 "

This formula produced a very nice cerate conforming in all respects with the U.S.P. product.

The following formula was used in preparing the cantharides cerate:

FORMULA NO. 1.

Cantharides in No. 60 powder	32 grammes.
Japan wax	12 "
Resin	18 "
Lard	28 "
Oil of turpentine	15 c.c.

The consistence of this cerate was about the same as the U.S.P. product, the appearance was more translucent and lighter in color.

A second sample was made, in which the following proportions were used:

FORMULA NO. 2.

Cantharides in No. 60 powder	32 grammes.
Yellow Wax	5 "
Japan "	7 "
Resin	18 "
Lard	28 "
Oil of Turpentine	15 c.c.

The consistence of this cerate was about the same as the one prepared according to Formula No. 1, the color being almost identical. The following formula was used for spermaceti cerate:

Spermaceti	10 grammes.
Japan Wax	25 "
Olive Oil	65 "

The consistence and color of this cerate were almost identical with the U.S.P. product.

Goulard's cerate was made according to the following formula (the camphor cerate having been previously made by using Japan wax):

Goulard's Extract	200 grammes.
Camphor Cerate	800 "

This cerate was all that could be desired, it being of a nice white color, and no oxidation taking place, after standing for more than a year.

Resin cerate was made according to the following formula:

Resin	35 grammes.
Japan Wax	10 "
Lard	55 "

This had about the same consistence as the U.S.P. product.

A NEW TEST FOR COCAINE.

By Dr. George L. Schaefer.

There are two well known tests for determining the freedom of commercial cocaine salts from other coca alkaloids. These are the permanganate test for detecting cinnamyl-cocaine, and the ammonia test, popularly known as McLagan's test, for detecting the presence of the coca alkaloids which are resistant to permanganate.

While it is generally admitted that the permanganate test is sufficient to detect the presence of cinnamyl compounds, chemists have expressed some doubt regarding the value of McLagan's test. The writer has for some time been conducting experiments with the object of finding a substitute for McLagan's test which would allow of the rapid and accurate determination of the presence in cocaine salts of the coca alkaloids not indicated by the permanganate test.

As the result of numerous determinations, I have devised a test based on the fact that the chromates of these alkaloids are much less

soluble than cocaine chromate, both in water and in water acidulated with hydrochloric acid. The relative solubility of the chromates in acidulated water is about 1 to 500 in the case of cocaine chromate, and 1 to 5,000 in the case of the residual alkaloidal chromates.

I therefore offer the following as a simple and satisfactory method of determining the purity of cocaine salts: 0·05 gramme cocaine hydrochlorate is dissolved in 20 c.c. of distilled water, mixed with 5 c.c. of a 3 per cent. solution of chromic acid, and to the mixture 5 c.c. of a 10 per cent. solution of hydrochloric acid are added. It is advisable to keep the temperature of the solution at 15° C. If the cocaine hydrochloride be pure a clear solution will result. If other than traces of foreign coca bases be present the solution becomes cloudy at once, or in a few minutes, according to the amount of impurity present.

It is advisable to make the test side by side with a specimen of known purity for comparison.

N. Y. Quinine and Chemical Works,
March 27, 1899.

THE UNITED STATES AND BRITISH PHARMACOPŒIAS.

By Clement B. Lowe.

The advent of the fourth British Pharmacopœia (B.P.) last year, invites not only comment upon it, but also comparison with the Pharmacopœia of our own country, the U.S.P., which became official January 1, 1894. Comparisons have been said to be odious, but they are not necessarily so; it depends entirely upon the motive in making them, and the way in which they are made.

The first comparison to claim our attention is the authority behind the books. The B.P. can claim to be a strictly official work, fully entitled to bear upon its cover the gold stamp of the royal arms and the words, "By Authority," as it is issued pursuant to Acts of Parliament of 1858 and 1862. The U.S.P. can only be regarded as semi-official, it never having been recognized by any law of the land as the supreme medical authority for the whole country, and yet it has been made by Act of Congress a legal authority in the conduct of the Department of Customs, of the Army, Navy and Marine Hospital Service, and of the District of Columbia and other

territories within the jurisdiction of the United States laws. It is also a legal authority in a number of States. Outside of these limits its authority is only moral, and yet it has the loyal support of the great majority of the physicians and pharmacists of our country.

The make-up of the bodies under whose direct authority these works are issued is altogether different. The B.P. is issued by the "General Council of Medical Education and Registration of the United Kingdom." This council is made up of thirty members, eighteen elected by the medical colleges or universities, one each by the Apothecaries' Society of London and Apothecaries' Hall of Ireland, five nominated by the Queen, and five direct representatives, one of the latter probably being an apothecary, so that the pharmacists have a *one-tenth* representation in the council. The general supervision of the work was performed by a committee of nine of the General Council (*two* of whom were apothecaries). This committee graciously acknowledged the great value of the assistance rendered by a committee of twelve of the Pharmaceutical Society of Great Britain, and also that of a number of eminent referees. The editing of the work was performed by the distinguished chemist, Prof. John Attfield. Some of the pharmacists of Great Britain are not satisfied with the present arrangement, but think that the revision of their Pharmacopœia should be assumed by the British Pharmaceutical conference, with the co-operation of the Pharmaceutical Associations and Societies of Great Britain, Ireland and the Colonies.

The U.S.P. is revised by a committee appointed by the "National Convention for Revising the Pharmacopœia," which meets in Washington at the commencement of each decade. The convention is made up of three accredited delegates from each of the incorporated National and State Medical and Pharmaceutical Associations, and Colleges of Medicine and Pharmacy, in continuous operation for at least five years immediately preceding; in addition the Army, Navy and Marine Hospital Service are represented by three delegates each. The committee in charge of the last revision consisted of twenty-five members, the majority of whom were pharmacists.

The books when compared from a typographical standpoint are both found to be 8vo's, although the B.P. is smaller, being 8½ x 5½ inches, containing 535 pages. The binding of the B.P. is superior,

as the back is fastened to the lids by tape and the edges of the leaves are stained red; the paper, however, is a little thin, the impressions showing through the leaves to some extent. The U.S.P. is 9¼ x 6 inches, containing 602 pages, the printing is rather more distinct and the titles stand out more prominently, owing to their being in heavier type. In comparing the contents of the books, many interesting differences are found; to bring these out more prominently I have tabulated their contents:

A COMPARISON OF THE CONTENTS OF THE U.S.P. WITH THOSE OF THE B.P.

Class.	U.S.P.	B.P.
Drugs of Vegetable Origin	202	142
" " Animal "	21	18
" " Chemical "	181	129
Acids (not included with chemicals)	32	29
Alkaloids and Alkaloidal Salts	32	25
Cerates	6	
Collodions	4	3
Confections	2	4
Decoctions	2	3
Discs (Lamella)		4
Glucosides and Neutral Principles	6	6
Effervescing Salts	4	6
Elixirs	2	
Emulsions	4	
Extracts, Solid	34	22
" Fluid	88	16
(Extractum Liquidum, B.P.)		
Lozenge Bases		4
Glycerites	6	9
Honeys	3	2
Infusions	4	22
Injections, Hypodermic		4
Juices (Succi)	1	6
Liniments	9	15
Lotions		2
Masses	3	
Mixtures	4	9
Mucilages	4	2
Oils (Fixed and Volatile)	53	35
Ointments	23	44
Oleoresins	6	
Oleates	3	1
Oxymels		2
Papers (Charta)	2	1
Petroleum Products	3	3
Pills	15	20

Class.	U.S.P.	B P.
Plasters	13	12
Powders	9	16
Sugars	2	2
Soaps	2	3
Spirits	25	18
Solutions (Liquors)	24	47
" Concentrated		9
Suppositories	1	7
Syrups	32	22
Tablets (Fabella)		1
Tinctures, made by percolation	57	30
" " " maceration	8	23
" " " solution	7	14
Triturations	1	
Troches	15	17
Vinegars	2	3
Waters	19	15
Wines	10	8
Reagents and Test Solutions	116	171
Volumetric Solutions	19	6

Commenting upon the table, we find that the following preparations are contained only in the U.S.P., viz.: Cerates, Elixirs, Emulsions, Masses, Oleoresins and Triturations. The following only in the B.P., viz.: Discs, Lozenge Bases, Hypodermic Injections, Lotions, Oxymels, Concentrated Solutions and Tablets. The formula of the troches of the B.P. differ from those of the former edition, and also from those of the U.S.P. in being calculated for a single lozenge, the ingredients being then mixed with one of the four lozenge bases to form a lozenge. The lozenge bases consist of the fruit basis flavored with black-currant paste, the rose basis flavored with rose-water, the simple basis without flavor and the tolu basis flavored with tincture tolu, and apparently intended as a vehicle for salts of the alkaloids. The hypodermic injections, which comprise apomorphine, cocaine, ergotin and morphine, are not popular in the United States, preference being given to the hypodermic tablets on account of their portability and permanence. The discs (lamellæ) are minute medicated discs of gelatin, each about $\frac{1}{50}$ grain. They comprise the following: atropine, $\frac{1}{5000}$ grain, cocaine, $\frac{1}{30}$ grain (formerly $\frac{1}{50}$), physostigmine, $\frac{1}{1000}$ grain, and a new one, homatropine, $\frac{1}{100}$ grain. They do not seem to be used by our oculists to any great extent, the solutions being preferred. The concentrated solutions (Liquores Concentrati) is a new class of preparations, which

are really weak tinctures, as they are mostly made by percolation with 20 per cent. alcohol. It comprises those of calumba, cusparia, krameria, quassia, rheum, sarsaparilla comp., senega, senna and serpentaria, tabella trinitrin (nitroglycerin tablets), each contain chocolate 5 grains and $\frac{1}{100}$ grain nitroglycerin. The comparative strength of the acids is exhibited in the following table:

	U.S.P.	B P.
Acid Acetic by weight	36·	33·
" " Dil. "	6·	4·27
" " Glacial "	99·–100·	99·
" Hydrobromic Dil. "	10·	10·
" Hydrochloric "	31 9	31·79
" " Dil. "	10·	10·58
" Hydrocyanic " "	2.	2
" Lacticum "	75·	75·
" Nitricum "	68·	70·
" " Dil. "	10·	17·44
" Phosphoricum "	85·	66·3
" " Dil. "	10·	13·8
" Sulphuricum "	92·5	98·
" " Dil. "	10·	13·65
" Sulphurosum "	6·4	6·4

Of the extracts B.P. three are standardized, and two (Ext. Bellad. Viride and Ext. Hyoscyam. Viride) are made from green drugs. The strength of the fluid extracts is the same in both Pharmacopœias, viz., 1 gramme of the drug to 1 c.c. The U.S.P. is especially rich in this class of preparations, there being an excess of 72 over the number in the B.P., only one (nux vomica) being standardized to five of the B.P., viz., belladonna, cinchona, ipecac, nux vomica and opium. The B.P. is especially rich in infusions and ointments. Percolation does not seem to be making headway across the water, as in the former B.P. 47 tinctures out of 77 were made by percolation; in the new B.P., 30 out of 67. The tinctures in the B.P. which are made by percolation are mostly made after a general formula, no special directions being given in the individual formula for packing the drug in the percolator, the matter being left to the judgment of the operator. This, it seems to me, is a very important omission, which may affect the result in a number of cases.

Another difference is that the B.P. directs the marc to be expressed, the liquid thus obtained to be filtered and added to the percolate, sufficient menstruum then being added to produce the required volume of tincture. Eight of the tinctures of the B.P.

have been standardized to five of the U.S.P. The following table gives the strength of those tinctures which differ most:

	Grammes in 100 c.c.	
	U.S.P.	B.P.
Tinct. Aconite	35	5
" Aloes	10	2·5
" Arnicæ Rad.	10	5
" Cantharis	5	1·25
" Cimicifugæ	20	10
" Cinnamomi	10	20
" Colchici Sem.	15	20
" Gelsemi	15	10
" Hydrastis	20	10
" Hyoscyami	15	10
" Iodi	7	2·5
" Opii (Morphine)	1·3–1·5	0·75
" Quillajæ	20	5
" Scillæ	15	20
" Serpentariæ	10	20
" Strophanthi	5	25

It will be noticed that there is a great difference in the strength of some of the most active tinctures, especially of those which are oftenest prescribed, *e. g.*, Tinct. Aconite U.S.P. is seven times stronger than the B.P. tincture, Tinct. Cantharides four times as strong, Tinct. Iodine nearly three times as strong, Tinct. Strophanthus twice as strong and Tinct. Opium about twice as strong. It seems not only extremely unfortunate, but also highly dangerous, that there should be such differences in strength in the preparations of two nations speaking the same mother tongue, and commercially so closely related to each other. If an English or Canadian physician visiting this country should use or prescribe Tinct. Aconite U.S.P. in the same doses as the B.P. tincture, it would inevitably be fatal.

A very striking difference in the pharmacopœias is in the weights and measures. In the U.S.P. the metric weights and measures only are used; in the B.P. the Imperial weights and measures (the Imperial ounce containing 437·5 grains, the Imperial pint 20 fluid ounces), alternative formula (which are only proximate) being given in metric weights and measures. To show how cumbersome is the B.P. system of weights and measures, I quote from the formula of Acidum Sulphuricum Dilutum B.P.: It is directed to take sulphuric acid 1 fluid ounce and 5¼ drachms (more exactly 1·65 fluid ounces),

or 1,333 grains, and distilled water a sufficient quantity to make 1 pint. The alternative formula is sulphuric acid 82·7 c.c. (or 152·4 grammes) and distilled water a sufficient quantity to make 1,000 c.c. In the U.S.P. we are simply directed to use 100 grammes sulphuric acid and 825 grammes distilled water.

The present B.P. follows in the footsteps of its predecessor in containing doses of the preparations and of certain of the crude drugs, this apparently not having worked injuriously to British physicians. In the United States the physicians have thus far opposed what they consider a decidedly dangerous innovation. The tests for identity and purity of the individual chemicals in the B.P. are not nearly so numerous as in the U.S.P., but in the appendix is given a concise series of "tests for substances mentioned in the text," *e. g.*, Tests for the Acetates, Bromides, etc.

Thirty-two articles have been introduced into the B.P. which were previously official in the U.S.P., but this is more than offset by the fact that forty-three were dismissed.

In the appendix of the B.P. are some alternative preparations for use in India and the Colonies where there are prevailing high temperatures. If the authority of the U.S.P. shall be extended to our new colonial possessions, similar allowances will also have to be made.

It should be stated, in conclusion, that the new B.P. is a very creditable work, a marked improvement upon its predecessor, but we think the U.S.P. compares quite favorably with it even though it antedates it nearly five years.

RECENT LITERATURE RELATING TO PHARMACY.

PERU BALSAM

H. Thoms (*Berichte d. Deutsch. Pharm. Ges.*, 1898, 264) presents a comprehensive article on the above subject. After a thorough historical review of the chemistry of the balsam and especially of the methods of assay suggested by Gehe & Co. (*Handelsbericht.*, Apr., 1895, 5; and K. Dieterich, *Ber. d. D. Pharm. Ges.*, 1897, 437), he reports an investigation of three absolutely authentic specimens, and agrees with the authors mentioned, that the qualitative nitric acid test should be replaced by an assay based on the percentage of cinnamein and the ester number of the same.

The results of his work are summed up in the following tests that he recommends:

One gramme of the balsam is extracted with ether, the ethereal solution, shaken in separatory funnel with two lots of 20 c.c. 2 per cent. solution of soda (great care being used to prevent emulsification) and the residue in funnel shaken twice with water. The combined aqueous liquids, after warming on water-bath to remove ether, are acidulated with hydrochloric acid and the resin, thereby precipitated, collected on a tared filter, washed free from chlorides and dried at 80°, must not weigh more than 0·28 gramme.

The ethereal solution remaining in funnel, evaporated from an Erlenmeyer flask on water-bath and heated for at least a half hour after free from ether, after twelve hours' rest in a desiccator, should weigh not less than 0·60 gramme. H. V. ARNY.

CINNAMEIN.

This cinnamein, mixed with 50 c.c. $\frac{1}{10}$ normal alcoholic potassa, after standing an hour by itself and warming an hour on water-bath, on addition of enough water to dissolve the separated potassium salt, is titrated with $\frac{1}{10}$ normal hydrochloric acid—phenolphtalein being the indicator. The difference between cubic centimetres of acid used and 50, multiplied by 0·0056, gives the quantity of potassa necessary for saponification of the cinnamein. One gramme cinnamein should require not less than 0·235 gramme potassa (ester number, 235).

The neutralized solution, after evaporation of alcohol on water-bath and cooling, when shaken with potassium permanganate, smells strongly of benzaldehyde.

The author found in the balsam, vanillin and a principle smelling like coumarin. The latter, however, was in too small quantity for absolute identification. He also examined wood, bark and legumes of Myroxylon Pareiræ, finding in all coumarin and cinnamic acid.

H. V. A.

SOLUTION OF ALUMINUM ACETATE.

Candussio (*Pharm. Zeit.*, 1898, 481) discusses that difficult preparation solution of aluminum acetate P. G., recommending as the easiest method of manufacture—addition of acetic acid to the calcium carbonate and pouring this into the solution of aluminum sulphate. He disapproves of the pharmacopœial maceration for twenty-four hours, urging immediate filtration. The official prepa-

ration is apt to gelatinize, due (according to the author) to formation of an allotropic form of basic aluminum acetate ($Al_2(C_2H_3O_2)_4(OH)_2$). He avoids this by using barium carbonate instead of calcium carbonate in the manufacture. H. V. A.

PREPARATION OF THE HYDROCHLORATES OF QUININE.

D. Vitali (*Pharm. Zeit.*, 1898, 481) finding the usual method of manufacture (double decomposition of quinine sulphate and barium chloride) unsatisfactory, by reason of barium contamination of product, recommends the following process:

For normal hydrochlorate he warms 17 parts of potassium chloride with an aqueous solution of 100 parts normal quinine sulphate, evaporates to dryness on water-bath and extracts residue with 95 per cent. alcohol, in which the quinine salt dissolves, while potassium sulphate is insoluble. The yellow solution is decolorized with animal charcoal and evaporated.

For acid hydrochlorate he employs 25 parts of potassium chloride to 100 of quinine bisulphate, the process being identical with the preceding one, save that the acid chloride crystallizes from concentrated alcoholic solution, while the normal has to be evaporated to dryness. H. V. A.

WHEAT OIL.

By the usual methods of grinding, about 1 per cent. of germs is obtained. These germs contain 12·5 per cent. fatty matter, about two-thirds of which can be removed by means of petroleum spirits. The mobile oil is yellowish-brown in color, and has a peculiar odor resembling wheat. It is soluble in ether, chloroform, petroleum ether, carbon bisulphide and glacial acetic acid dissolves an equal volume at 65° C. It is insoluble in cold absolute alcohol.

The oil readily turns rancid. A sample after standing one year contained 43·86 per cent. of free acid, calculated as oleic. The following are some of the important constants of wheat oil:

Specific gravity at 15° C.	0·9245
Solidification-point	15° C.
Melting-point of fatty acids	39·5° C.
Solidification-point of fatty acids	29·7° C.
Saponification value	182·81
Iodine value of oil	115·17
Iodine value of fatty acids	123·27

—G. de Negri, 1898, *Chem. Ztg.*, **22**, 976.

L. F. KEBLER.

PHARMACOLOGICAL NOTES.

STRONTIUM BROMIDE IN EPILEPSY.

Roche (*London Lancet*, October 15, 1898) renews his recommendation of strontium bromide in the treatment of epilepsy, and states that he has not seen any case in which it will not diminish the number of attacks if given properly, and that it does not cause the depression that sometimes attends the use of potassium bromide. In cases in which the aura is sufficiently prolonged, the patient should take 30 grains at once, and repeat the dose every hour if required. In this way the attacks are frequently warded off. Many patients take a dram daily for long periods without ill-effects.—*Phila. Med. Jour.*, p. 946. J. L. D. M.

LYSOL POISONING.

Heinrich Cramer (*Centralblatt für Gynäkologie*, October 1, 1898) reports a case of lysol poisoning in a primipara, twenty-two years of age, following a normal labor, after a vaginal douche of 4 liters of 1 per cent. solution of lysol had been used. On the afternoon of the same day there was a slight rise of temperature, and a second douche was given. After 1½ liters of the solution had been used the patient became suddenly restless, her breathing heavy, her eyes rolled and she lost consciousness, and her pulse was very rapid and feeble. The douching was stopped and the patient regained consciousness in three minutes, but complained of feeling dizzy and sank into a condition of stupor. On the next day the urine was dark brown, contained blood casts, numerous broken-down red blood-corpuscles and 0·3 per cent. of albumin. The general condition became worse from day to day, and death resulted after a week. Upon necropsy, endometritis, parametritis and endophlebitis of the uterus were found, with hemorrhagic inflammation of the kidneys. Cramer mentions a considerable number of cases of lysol-poisoning, and believes that the drug should be used with care, and that the amount of fluid used should be taken into consideration, as well as its concentration.—*Phila. Med. Jour.*, p. 1066. J. L. D. M.

COMPOSITION OF DIPHTHERIA TOXIN.

P. Ehrlich (*Deutsche Med. Woch.*, No. 38) states beside the essential toxin in diphtheria poison, there are other substances very much less toxic, "toxoids," which are important, however, as they bind

the antibodies the same as the essential toxin. As a diphtheria bouillon culture stands, the toxin diminishes while the toxoids increase. He classifies the toxoids as: protoxoids, which have a stronger affinity for the antitoxin than the genuine toxin; syntoxoids, which have the same affinity as the toxin, and epitoxoids, which have less affinity. He considers the latter as a primary product of the bacillus, and not a transformation product of the diphtheria toxin, and calls them "toxones." These toxoids and toxones are not simple substances, but can be subdivided into what he calls proto, deutero and tritoxins. His research proves that in the diphtheria toxin molecule there are two independent atom-complexes. One is haptophorous, that is, it binds the antitoxin; the other is toxophorous, the cause of the specific toxic effect. Experiments on frogs disclosed that the first exert their effect even when cold, but that the toxophorous require warmth before they can affect the cells. This difference in time explains the incubation period. There seems to be a further possibility that the protoxoids are able, in certain circumstances to effect a direct cure by forcing the toxin out of its combination with the elements of the tissues by means of their stronger affinity for it.—*Jour. Amer. Med. Assoc.*, p. 1258.

J. L. D. M.

ANISON, THE NEW ANESTHETIC.

This is a colorless, aqueous solution of trichlor-pseudobutyl-alcohol or aceton-chloroform, and corresponds to a 2 to 2·5 solution of cocain, but has none of the latter's local irritation and is non-toxic. As much as 17 grains have been used without after-effects. The anesthetic effect is also immediate, with no interval, as with cocain. In suturing, a small amount of anison injected at the points where the stitches are to be taken will prevent pain. Even inflammatory phlegmonous processes can be rendered perfectly insensible if sufficient anison is used to keep them flooded all the time. The anesthesia was not perfect in all cases, but this can be said of all other anesthetics. L. Sternberge, of Berlin, concludes his report of a dozen tests of anison in the *Klin. Therap. Woch.*, of September 25th, by recommending it as a useful and safe anesthetic.—*Journ. Amer. Med. Assoc.*, November 12, 1898, p. 1180.

J. L. D. M.

EDITORIAL.

URANIC, THORIC AND POLONIC RAYS.

It is now twenty-five years since Balfour Stewart wrote his remarkable treatise on "The Conservation of Energy." In it was shown, among other things, that the ancients even as far back as Heraclitus, who lived at Ephesus B.C. 500, conceived the idea of the essential unrest and energy of things. He gives us, it will be recalled, at one place, a classification of *energies*, and in doing so proceeds with the following words of caution: "We must warn our readers that this enumeration has nothing absolute or complete about it, representing as it does, not so much the present state of our knowledge as of our want of knowledge, or rather of profound ignorance of the ultimate constitution of matter." Since the publication of this book the law of the conservation of energy has come to be regarded as one of the most essential conditions in nature.

A few years ago the world was startled by the discovery by Professor Roentgen of certain rays from a Crookes' vacuum tube. These rays are not refracted, develop no heat, the retina of the eye is not sensitive to them, and they are without influence upon the most sensitive magnetic instruments. These rays have been called *Roentgen X-Rays*, and are supposed to be due to longitudinal vibrations of ether. In this respect they agree with *Hittorf's Kathode Rays*, but in the latter the waves are of extremely short wave lengths. "*Hertz's electric light waves*," on the other hand, differ from those of either Roentgen or Hittorf in that they are transversal and of greater wave length than either of them. More recently, since the well-known discovery by Roentgen, Becquerel has undertaken to determine the photographic effects of certain phosphorescent and fluorescent substances, and we have as a result of the author's experiments what are known as *Becquerel's Rays*.

In January, 1896, Poincaré inquired, after certain experiments had been made by him, if in all bodies in which the fluorescence is sufficiently intense there is not an emission of Roentgen, as well as luminous rays, no matter what may be the cause of the fluorescence. M. Henry has shown that "phosphorescent sulphide of zinc could produce photographic impressions through a sheet of black paper which was quite impervious to light." Niewenglowski observed the same phenomenon with sulphide of calcium which has been exposed to light. Later on, Troost obtained strong photographic impressions with an artificial phosphorescent hexagonal blende through black paper and thick cardboard. Becquerel made similar experiments with uranium salts, some of which are fluorescent. He obtained photographic impressions through black paper with the double sulphate of uranium and potassium. Becquerel found that uranium and all of its compounds, whether fluorescent or not, act in the same manner, and metallic uranium is the most active of them all. He also noticed that light is not necessary, but that uranium compounds kept in the dark for years continued to act on photographic plates. This was an entirely new phenomenon. He also showed that *uranic rays* were possessed of the following properties: They traverse opaque bodies, but are absorbed more easily and are, therefore, less penetrating than Roentgen rays. They make the air through which they pass a conductor of electricity, as do Roentgen rays; this is an important property of both kinds of rays. Following these results it was only natural to ask if uranium were the only metal possessed of this property, and

Schmidt has found that compounds of thorium are the only ones endowed with similar properties. Uranic rays have been frequently called Becquerel rays; this name may be generalized by applying it also to *Thoric rays* and all rays of that character.

While making certain experiments with a number of minerals which contained either uranium or thorium, for the purpose of measuring the conductivity of the air when under the influence of *hypophosphorescent* or *radio-active* substances it was noticed by S. Curie, that in some cases the intensity of the action was quite unexpected, and the presence of another element was immediately suggested. After considerable experimenting upon one of these minerals, viz.: pitch blende, a body was obtained by chemical means which was about 400 times more active than uranium. This body is supposed to be a new element added to bismuth and it is proposed to call it *Polonium*. Since this research M. and Mme. Curie with G. Bémont have "discovered in pitch blende indications of an element (radium) allied to barium in its chemical properties, but differing in its radio-activity."

The action of uranic, thoric and polonic rays on sensitive plates is various. Those of thorium are the least active. Uranium compounds give an impression in an hour, and sulphide of polonium produces a decided action in from one-half to three minutes.

The fluorescent action produced by the compounds of uranium, thorium and polonium on platinocyanide of barium are equally remarkable. The two former compounds have apparently no action, whereas the sulphide of polonium has a very distinct action. From experiments made with the latter compound, it would appear "that we can obtain an indefinite amount of light without the expenditure of any energy."

In a paper in the *Chemical News*, February 17, 1899, from which we have freely quoted, is found also an interesting discussion on the analogies and differences between Becquerel and other rays. *Becquerel rays*, or those produced by compounds of *Uranium*, *Thorium* and *Polonium*, are characterized by the following properties: "They render gases which they traverse conductors of electricity; they produce photographic impressions. These properties do not in any way depend on the past or present action of light on bodies emitting these rays. They traverse all substances, glass, paper, metals and liquids, but are, as a rule, absorbed to a great extent. Their emission appears to be spontaneous; it is constant, and indicates the presence of certain elements in the active substance. The spontaneous emission of these rays appears to give rise to a continuous disengagement of energy of which we cannot find the source. This is in direct contradiction to Carnot's principle. It is possible, however, to conceive of the production of the phenomenon in different ways. It may be a phosphorescence of considerable duration caused by the action of light. It may be an emission of matter accompanied by a loss of weight of the radioactive bodies or the utilizable energy may be constantly diminishing. Again, it may be a secondary emission produced by rays analogous to X-rays. But it may well be asked whether Becquerel rays may not be produced at the expense of the heat in the surrounding medium, contrary to Carnot's principle."

In view of the knowledge that the investigator in this latter part of the nineteenth century is bringing to light and establishing thereby an apparently new

order of things, we must recall that there has been a gradual evolution since ancient times, and, step by step, a clearer insight into the workings of nature has been gained. There is so much that is new and so much plausibility in everything that is new, that we wonder sometimes, if the present rate of progress keeps up, what a task it will be for the student of 100 years hence simply to know what is known of a very fragmentary part of the whole. And further, how difficult it will be to put the whole together to get any adequate conception of how intricate and wonderful the universe is in its make-up. It may not be amiss to recall a few words of Balfour Stewart, who wrote at a time when his mind was not befogged by the results of numerous observers since his time.

"The ancients possessed great genius and intellectual power, but they were deficient in physical conceptions, and in consequence their ideas were not prolific. It cannot be said that we, of the present day, are deficient in such conceptions; nevertheless it may be questioned whether there is not a tendency to rush into the opposite extreme and to work physical conceptions to an excess. Let us be cautious that in avoiding Scylla we do not rush into Charybdis. For the universe has more than one point of view, and there are possibly regions which will not yield their treasures to the most determined physicists, armed only with kilogrammes and metres and standard clocks."

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

CHEMISTRY: General, Medical and Pharmaceutical including the Chemistry of the U. S. Pharmacopœia. By John Attfield, F.R.S. New (sixteenth) edition. In one royal 12mo. volume of 784 pages with eighty-eight illustrations. Cloth, $2.50, net. Lea Brothers & Co., Philadelphia and New York.

The present edition corresponds to the concurrently produced seventeenth British edition. It is a revision of the fourteenth American edition, which appeared toward the close of 1894. In revising several changes have been made in the chemical names; much of the text has been rewritten; a few sections have been rearranged to make the order of treatment more logical; and some new topics have been introduced. By eliminating some of the less important matter, the author has been able to keep the work within the size of its predecessors. The book is intended as a learner's manual, and, in this capacity, the present edition will maintain the long-established and well-deserved reputation which the work enjoys. JOSIAH C. PEACOCK.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and one hundred associate editors assisted by corresponding editors, collaborators and correspondents. Illustrated with chromo-lithographs, engravings and maps, Volume II, Philadelphia, New York and Chicago. The F. A. Davis Company, Publishers, 1899.

In the first volume the majority of sections were prepared under the immediate supervision of the editor. In the second volume, at hand, all of the articles have been prepared by their respective editors. The aim of the editor is not only to facilitate the labor of the practicing physician and to assist investigators and authors in their researches, but he also seeks to elucidate, through

contributions from men possessing special knowledge or unusual experience in a particular line, diseases which, owing to their complexity are not generally understood. This plan has borne fruit and the readers have before them in this volume exceptionally valuable articles on a number of exacting subjects, viz.: "Cerebral Hæmorrhage," by Dr. Browning, of Brooklyn; "Cirrhosis of the Liver," by Professor Adami, of Montreal; "Cholera," by Professor Rubino, of Naples; "Cholelithiasis," by Professor Graham, of Toronto; "Diabetes," by Professor Lépine, of Lyons. The better known affections have also been edited by writers of special ability. Among the articles of this kind is that on "Diphtheria," by Drs. Northrup and Bovaird, of New York. Among other papers may be mentioned that on "Catalepsy," by Professor Eskridge, of Denver; "Chorea," by Professor Bondurant, of Mobile; "Cocainomania," by Dr. Kerr, of London; "Constipation," by Prof. N. S. Davis, of Chicago; "Dilatation of the Heart," by Dr. Vickery, of Boston.

The work is well done and every effort has been made to make it one of the most important contributions to scientific medicine. The illustrations are well made and the whole work well executed, and reflects credit on editor and publishers alike.

THE MEDICAL NEWS POCKET FORMULARY for 1899. By E. G. Thornton, M.D. Lea Bros. & Co. 1899.

This work consists of a collection of formulæ on various medical subjects, beginning with abortion (to prevent) down to yellow fever. The author says of the work: "That there is a broad and legitimate field of usefulness for works of this character is self-evident." It may be that the newly graduated M.D. is at a loss how and what to prescribe. It may be that there are physicians who are in need of works of this character. No doubt the same arguments may be employed in support of this "Pocket Formulary" as are made by those who write and utilize quiz compends. Both classes of publications may be useful apparently to some people, but we believe that every student ought to make his own quiz compend from the lectures he attends, the literature he reads and the results of his experience, and so the physician ought to make his own Formulary in a like manner. The real benefactors do not necessarily alleviate temporary conditions. We cannot help but think that works of this character tend to promote quackery and develop anything but a scientific medicine. What we want is less work on Pocket Formularies and more effort put in the direction of the National Formulary. Elevate the latter and you develop the character of physician and pharmacist. We do not mean to reflect on this particular book, as the work has been well done and the selections are carefully made. It is the principle, however, that we would not promulgate.

DIGEST OF CRITICISMS ON THE UNITED STATES PHARMACOPŒIA. Seventh Decennial Revision (1890). Part II. Published by the Committee of Revision and Publication of the Pharmacopœia of the United States of America (1890–1900).

This part contains abstracts from all accessible sources up to the end of December, 1897. The compilation was made by Hans M. Wilder, and was passed through the press by him and Dr. Charles Rice conjointly. The work is invaluable to all investigators in pharmaceutical work, and may be had upon

request to the Committee of Revision, and the enclosing of 6 cents to defray postage.

THIRD REPORT ON THE LLOYD MYCOLOGICAL MUSEUM. For the year 1897. By C. G. Lloyd, Cincinnati, Ohio.

Nine hundred and nineteen named specimens have been added to this collection.

COMPILATION OF THE VOLVÆ OF THE UNITED STATES. C. G. Lloyd.

The various genera which were formerly included in the Friesian genus Agaricus are arranged under the tribes proposed by W. G. Smith some thirty years ago.

THE FLORA OF MOUNT KOSCIUSKO. By J. H. Maiden, Department of Agriculture, Sydney, New South Wales. Miscellaneous Publication, No. 241.

Mt. Kosciusko is the highest mountain in Australia, and has been talked of as a sanatorium. Mr. Maiden gives a record of the plants actually found on Mt. Kosciusko.

LA NATURALEZA. Periódico Científico de la Sociedad Mexicana de Historia Natural. Publicado bajo la Dirección del Sr. Dr. Manuel M. Villada. Segunda Serie. Tomo II y III. Cuadernos Números, 12, 1 y 2.

This publication of the Natural History Society of Mexico contains interesting information on the fauna and flora of Mexico. Among these is an excellent illustration with description of *Erythroxylon ellipticum*, J. Ramirez.

EXPERIMENTAL FARMS. Report of the director, Wm. Saunders, to the Honorable Minister of Agriculture of Ottawa.

Among other things which are contained in this report it would appear that smutty oats soaked in Bordeaux moisture for four hours are rendered as free from smut as if soaked for 8, 12 or 24 hours. It appears to be equally efficient as the potassium sulphide test, which is more expensive and requires a longer treatment for its effects to be realized.

COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

At the regular quarterly meeting of the New York College of Pharmacy held on January 17th, the subject of Cod Liver Oil was discussed by various speakers: The first paper was on some "Notes on the Codfish, its Related Species, Food, Habits and Propagation." Illustrated by stereopticon views, by Major Fred Mather, lately in charge of the Fish Hatcheries at Cold Spring Harbor. Following this J. H. Stallman, of Stallman & Fulton, gave a communication on "The Commerce in Cod Liver Oil." A paper on "The Chemistry of Cod Liver Oil" was given by E. H. Gane, Ph.C., with McKesson & Robbins. This was followed by an article on "The Pharmacy of Cod Liver Oil," by Caswell A. Mayo, Ph.G.

THE PHILADELPHIA COLLEGE OF PHARMACY.

ANNUAL MEETING.

The annual meeting of members of the College was held on March 27, 1899, at 4 P.M. The President, Charles Bullock, presided. The proposition to amend By-laws Chap. IV, Art. IV, was referred by the Board of Trustees to the members of the College. The amendment was approved, action to be taken thereon at the next stated meeting in June. The annual meeting being the occasion for reports of the officers and standing committees, these were given in the following order: The Committee on Publication gave a report which corresponded quite closely in essential details to that presented last year. The report of the Editor was in part as follows:

"Of the twelve issues published during the last year, two were edited by the late Professor Trimble, and the remaining numbers by the acting editor.

"It ought to be mentioned that any favorable features of the Report of the JOURNAL for the present year represent, certainly in part, the fruition of the unselfish labors of Professor Trimble.

"The total number of pages published were 651. These were devoted to 68 original papers; 38 illustrations; 7 reprinted articles from other journals; 328 abstracts of literature relating to pharmacy and allied subjects, and 90 reviews and bibliographical notices: and in addition 7 biographical sketches and special reports of various pharmaceutical and scientific associations, as well as the reports of the pharmaceutical and other meetings of the College.

"The original articles have been contributed by some of the foremost writers on pharmaceutical subjects in this country, as well as by some from abroad. And further, a hearty co operation is manifest in the numerous reviews and abstracts being furnished the JOURNAL by prominent investigators in their special lines, besides one or more contributions from all of the members of the faculty of our own College."

The Curator, J. W. England, presented a report of the condition of the Museum and its accessions during the year. One of the most notable was a collection of upwards of 300 specimens of crude drugs from many parts of the world received from the Philadelphia Museums, through Mr. Howard B. French. The Curator presented two recommendations. The one, a suggestion of Mr. James C. Perry, that a working collection of the nearly 1,000 official drugs and preparations be placed in the Students' Reading-room, alongside of the Students' Herbarium, so that both could be used, side by side, and day by day. The other recommendation was that cases be built along the west wall of the Museum, below the window sill, with upper cases in each of three blank wall spaces, the tops of the latter to be on a level with the other high cases in the room.

Both recommendations were received and referred to the Board of Trustees with a favorable recommendation.

The Librarian, Thomas S. Wiegand, reported that during the past year there had been added to the library by presentation 150 volumes, including nearly 100 from the family of the late Professor Trimble; by purchase, 30 volumes, not including the serials received as exchanges for the AMERICAN JOURNAL OF PHARMACY, which number nearly 149 separate publications.

The donations were in some classes extremely valuable, and make the chemical section of the library of much greater use than ever before.

An election of Officers and Trustees being a part of the action of this meeting, nominations being made and a ballot ordered, the Tellers reported the result as follows: President, Charles Bullock; First Vice-President, Wm. J. Jenks; Second Vice-President, Howard B. French; Recording Secretary, W. Nelson Stem; Corresponding Secretary, Dr. A. W. Miller; Treasurer, James T. Shinn; Librarian, Thos. S. Wiegand; Curator, Jos. W. England; Trustees for three years, T. M. Perot, Prof. Jos. P. Remington, C. C. Meyer; Trustees for unexpired terms, E. T. Dobbins, H. L. Stiles; Publication Committee, Prof. Henry Kraemer, Editor, Henry N. Rittenhouse, Wallace Procter, Jos. W. England, Prof. Sam'l P. Sadtler.

Meeting, on motion, adjourned. WM. B. THOMPSON, *Secretary.*

SEVENTY-EIGHTH ANNUAL COMMENCEMENT.

The exercises connected with conferring the degrees of Doctor in Pharmacy and Pharmaceutical Chemist were held in the Academy of Music, Wednesday evening, April 19th, at 8 o'clock.

Prayer was offered by Rev. Floyd W. Tompkins.

The degrees were conferred by Charles Bullock, President of the College.

The following received the degree of Doctor in Pharmacy:

Name.	*Subject of Thesis.*	*State.*
Allen, Milton Deronda,	*Syrup and Sugar*,	New Jersey.
Andrews, Willard Crandall,	*Acidum Carbolicum*,	Ohio.
Arnott, William,	*Syrupus Ferri Iodidi*,	Delaware.
Aughinbaugh, John Keely,	*Saffron*,	Pennsylvania.
Bachman, Herbert Keck,	*Liquor Potassæ*,	Pennsylvania.
Ball, Clifford Arthur,	*Castor Oil*,	Pennsylvania.
Bamford, Melvin William,	*Powdered Drugs*,	Pennsylvania.
Bear, Benj. Samuel Janney,	*Oleum Morrhuæ*,	Pennsylvania.
Beddow, Llewellyn Jenkins,	*Ammonia Water*,	Pennsylvania.
Blankemeyer, Henry John,	*Advantages of Modern Pharmacy*,	Pennsylvania.
Booth, John Henry,	*Liquor Potossæ*,	Pennsylvania.
Brookes, Lulu (Ph.G.),	*Bismuth Sub-carbonate*,	Texas.
Brown, Hampton H.,	*Successful Drug Clerk*,	Pennsylvania.
Buckingham, Harry S.,	*Mass of Quinine Sulphate*,	New Jersey.
Chalquest, Gustave Emil,	*Rhus Radicans*,	New Jersey.
Chamberlain, Lowell H.,	*Therapeutical Uses of Opium*,	Iowa.
Chamberlin, William A.,	*Fanatics in Science*,	Indiana.
Clark, John Edward,	*Belladonna*,	Pennsylvania.
Cockroft, David Holiday,	*Starches*,	Pennsylvania.
Cohen, John Thomas,	*Acidum Phosphoricum*,	Pennsylvania.
Crawford, Horace Victor,	*Euphorbia Ipecacuanha*,	Pennsylvania.
Culby, Walter Gibson,	*Official Preparations of Opium*,	Pennsylvania.
Curtis, Henry,	*Eucalyptus Globulus*,	Minnesota.
Davis, Berryman K.,	*Sanitary Science in Pharmacy*,	Missouri.
Davis, Benjamin Winter,	*Successful Pharmacy*,	New Jersey.
Davis, Samuel Bond,	*Konseals*,	New Jersey.
De Buest, William Hare,	*Volumetric Analysis of Citric Acid*,	Pennsylvania.
Diehl, George Edward,	*Benzin*,	W. Virginia.
Dixon, John Glaspey,	*Syrupus Acidi Hydriodici*,	New Jersey.

Name.	*Subject of Thesis.*	*State.*
Doherty, Harry Aloysius,	*Liquor Zinci Chloridi U.S.P.*,	New Jersey.
Donnelly, Clarence Eugene,	*Liquor Magnesii Citratis*,	New Jersey.
Doubler, George Hougen,	*Methyl Salicylate*,	Pennsylvania.
Egel, Frederick William,	*Liquor Sodæ*,	New Jersey.
Falkenhainer, Charles, Jr.,	*Ferri Sulphas Exsiccatus*,	Iowa.
Faulhaber, Gustave Adolph,	*Scopolia Carniolica*,	Ohio.
Fishburne, Richard Levis,	*Cod-Liver Oil*,	Pennsylvania.
Fleming, Arthur Bowles,	*Emulsion of Cod-Liver Oil*,	Pennsylvania.
Foltz, Edgar David Grant,	*A Successful Pharmacist*,	Pennsylvania.
Gasslein, Richard Joseph,	*Combined Drug Mill and Sieve*,	Pennsylvania.
Grady, Wm. Patrick,	*Benzin Extraction*,	Pennsylvania.
Gryning, John Francis,	*Camphor Tree and its Products*,	Pennsylvania.
Hammond, Nathan Browne,	*Advantages of Collegiate Pharmaceutical Training*,	Pennsylvania.
Hance, Howard Ivins,	*Examination of Strychnine Sulphate*	Pennsylvania.
Hannum, John Lewis,	*Beet Sugar Industry*,	Pennsylvania.
Harvey, Charles John,	*Liquor Magnesii Citratis*,	Pennsylvania.
Heineberg, Alfred,	*Investigation of Jalap*,	Alabama.
Hetrick, Harry Leady,	*Aconitum*,	Pennsylvania.
Heyl, Charles Ambrose,	*Official Chlorinated Compounds*,	Pennsylvania.
High, Raymond,	*Syrupus Ipecacuanhæ*,	Pennsylvania.
Hoagland, Robert John,	*Improvements of Three Official Syrups*,	Illinois.
Hoch, Quintus,	*Acidum Aceticum*,	Pennsylvania.
Holland, Albert James F.,	*Unguentum Hydrargyri Nitratis*,	Pennsylvania.
Holt, Edwin Merrimon,	*Syrupus Lactucarii*,	N. Carolina.
Hottenstein, Peter David,	*Ammonium*,	Pennsylvania.
Huzzard, Curtis,	*Ergota*,	Pennsylvania.
Jackson, Charles Henry,	*Estimation of Lithia Tablets*,	New Jersey.
James, Arthur Bernstein,	*Safeguards against Deterioration of Stock*,	New York.
Jenkins, David Evans,	*Elixirs*,	Pennsylvania.
Kaderly, Eugene John,	*Estimation of Pills of Ferrous Iodide*	Ohio.
Keiser, Frederick Ilick,	*Unguenta*,	Pennsylvania.
Kemp, Lucien Scott,	*Tincture of Iodine*,	Ohio.
Kimberlin, Frederick Wm.,	*Phytolacca Decandra*,	Pennsylvania.
Klusmeyer, Harry Chester,	*Fluid Extract of Kola*,	Pennsylvania.
Koch, Christopher, Jr.,	*Commercial Sodium Thiosulphate*,	Pennsylvania.
Kraus, Wm. Fred. Constn.,	*Emulsions*,	Pennsylvania.
Krehl, Benjamin,	*Pancreatinum*,	New York.
Kyser, George H. (P.C.)	*Gossypium*,	Alabama.
Lauer, Julius Paul,	*Commercial Malt Extract*,	Pennsylvania.
Lehman, George Theodore,	*Oleum Olivæ*,	Ohio.
Lock, William,	*The Microscope*,	Pennsylvania.
Love, Thomas B.,	*The Remington Pestle*,	Pennsylvania.
McClintock, Theodore B.,	*Assay of Fluid Extract of Guarana*,	New York.
McCluse, Richard Ferris,	*Examination of Glycerin*,	Delaware.

Name.	*Subject of Thesis.*	*State.*
McCollin, James Garrett, Jr.,	*Examination of Tinctura Ferri Chloridi,*	Pennsylvania.
McDonnell, Joseph Francis,	*Honey,*	Pennsylvania.
McFall, John Allen,	*Valuation of Compound Jalap Powder,*	S. Carolina.
MacPherran, Ivan LeRoy,	*The Soda Fountain,*	Pennsylvania.
Mervine, Graydon Duncan,	*Cera Flava,*	Pennsylvania.
Moury, Joseph Daniel,	*Belladonna,*	Pennsylvania.
Mutty, Walter Clement,	*Terebinthina Canadensis,*	Maine.
Nicklas, David Edwards,	*Koumiss,*	Pennsylvania.
Osterlund, Otto William,	*Cinchona and its Bast Fibres,*	Sweden.
Patrick, William Smith,	*Formaldehyde,*	New Jersey.
Pflieger, Ellwood Keech,	*Liquor Potassii, Arsenitis*	Pennsylvania.
Price, Arthur Chew,	*Sponges,*	Delaware.
Radefeld, Robert Hugo,	*Bismuthi Subnitras,*	Pennsylvania.
Ranck, David Walter,	*Valuation of Diluted Hydrobromic Acid,*	Pennsylvania.
Roberts, DeWilton Smith,	*Camphora,*	Pennsylvania.
Roessner, Benjamin,	*Eugenia Jambolana,*	Pennsylvania.
Rogers, Edward Bancroft,	*Liquor Calcis,*	New Jersey.
Ross, Dell Noblit,	*Suppositoria,*	Pennsylvania.
Schwaemmle, Fred. P., Jr.,	*Pharmacy as a Profession,*	Pennsylvania.
Seitz, John Alphonsus,	*Liquor Hydrargyri Nitratis,*	Delaware.
Seubert, Charles Aloysius,	*Rhus Toxicodendron,*	Pennsylvania.
Shannon, Samuel Coward,	*Yellow Mercuric Oxide,*	Pennsylvania.
Sheehan, William Henry,	*Pepsinum,*	Pennsylvania.
Shirey, Orville Ludwig,	*Valuation of Spiritus Ammoniæ Aromaticus,*	Pennsylvania.
Sipes, Clarence Leslie,	*Examination of Fluid Extract of Witch Hazel,*	Pennsylvania.
Smith, Arthur N. (Ph.G.),	*Tragacantha and Acacia,*	Pennsylvania.
Smith, Charles E. Rupert,	*Passiflora incarnata,*	Pennsylvania.
Snyder, Herman Hugo,	*Confectio Rosæ,*	Pennsylvania.
Stahlé, Robert Nevin,	*Cod-Liver Oil,*	Pennsylvania.
Stang, Peter,	*Valuation of Donovan's Solution,*	Pennsylvania.
Steel, Chalmers Alexander,	*The Model Pharmacy,*	Pennsylvania.
Stout, Philip Samuel,	*Ground Nut Oil,*	Pennsylvania.
Strode, R. Clark,	*Camphor,*	Pennsylvania.
Turner, Joseph Constant,	*Phytolacca decandra,*	Pennsylvania.
Tyler, William Watson,	*Aristol,*	Virginia.
Underwood, Jas. H. (P.C.),	*Calomel,*	New Jersey.
VanDyke, James Wilbur,	*Distilled Water,*	New Jersey.
Watson, James Nathaniel,	*Acidum Boricum,*	Pennsylvania.
Weakley, William Stair,	*Crocus and its Adulterants,*	Pennsylvania.
Wiza, Joseph Louis,	*Essence of Pepsin,*	Pennsylvania.
Wyckoff, Elmer LeRoy,	*Nux Vomica,*	New York.
Young, Annie Hawkins,	*Chloroform,*	N. Carolina.
Zeller, Earl Emanuel,	*Senna,*	Pennsylvania.
Ziegler, Chester Winsor,	*Aqua Hydrogenii Dioxidi,*	Pennsylvania.

The following received the degree of Pharmaceutical Chemist:

Name.	*Subject of Thesis.*	*State.*
Balliet, Howard Paul,	*Colchicum*,	Pennsylvania.
Hesse, Frederick William,	*Hemp*,	Georgia.
Mattison, R. Van S., Jr.,	*Asbestos*,	Pennsylvania.
Shoults, Robt. G. (Ph.G.),	*Examination of Acacia*,	California.
West, Katharine Powell,	*Carica Papaya*,	Pennsylvania.

The degree of Graduate in Pharmacy was conferred upon:

Name.	*Subject of Thesis.*	*State.*
Morse, Thomas,	*Gossypium*,	Alabama.

Special certificates for a two years' course in general, applied and analytical chemistry were awarded by Prof. Samuel P. Sadtler to the following:

Kinzey, Calvin Otto, Maryland.
Morgan, Clayton Edward, Massachusetts.
Toplis, William G. (Ph.G), Pennsylvania.
Wirth, Adam, Louisiana.

The following States and countries were represented by the Graduating Classes:

Alabama	3	Maryland	1	South Carolina	1
California	1	Massachusetts	1	Sweden	1
Delaware	4	Minnesota	1	Texas	1
Georgia	1	Missouri	1	Virginia	1
Illinois	1	New Jersey	14	West Virginia	1
Indiana	1	New York	4		
Iowa	2	North Carolina	2	Total	127
Louisiana	1	Ohio	5		
Maine	1	Pennsylvania	78		

Prof. Joseph P. Remington, Dean of the Faculty, announced that Melvin William Bamford had attained the grade of Distinguished, and that the following members of the class had attained the grade of Meritorious: Alfred Heineberg, David Evans Jenkins, Theodore Brown McClintock, John Allen McFall, Otto William Osterlund, Edward Bancroft Rogers and Peter Stang.

AWARD OF PRIZES.

The Procter Prize of a gold medal and certificate for highest grade of scholarship and meritorious thesis was awarded to Melvin William Bamford and presented by James T. Shinn.

The William B. Webb Memorial Prize of a gold medal and certificate, offered by Mrs. Rebecca T. Webb, for the highest general average in the branches of committee, operative pharmacy and specimens, was awarded to Melvin William Bamford and presented by Wm. J. Jenks, with honorable mention of Alfred Heineberg, Edward Bancroft Rogers and Peter Stang.

Pharmacy.—A prize of a gold medal, offered by Prof. Joseph P. Remington, for an original device or contrivance useful in practical pharmaceutical work, was awarded to Richard Joseph Gasslein.

Chemistry.—A prize of $25 in gold, offered by Prof. Samuel P. Sadtler, for knowledge of quantitative chemical analysis, was awarded to Robert Grafton

Shoults, with honorable mention of Charles John Harvey, Orville Ludwig Shirey, Walter Clement Mutty and Peter Stang.

Materia Medica.—A prize of $25, by Prof. Clement B. Lowe, for the recognition of rare drugs by the aid of the simple microscope only, was awarded to Charles Ellwood Rupert Smith, with honorable mention of Melvin William Bamford, Alfred Heineberg, Berryman K. Davis and Edward Bancroft Rogers.

Pharmacognosy.—A prize of $25, by Prof. Henry Kraemer, for the best thesis on the pharmacognosy of drugs, was awarded to William Stair Weakley, with honorable mention of Melvin William Bamford and Alfred Heineberg.

American Journal of Pharmacy.—A prize of $25, by Prof. Henry Kraemer, for a paper (not intended for a thesis) involving original work done in the Chemical Laboratory, was awarded to Christopher Koch, Jr., with honorable mention of Charles Falkenhainer, Jr.

The Maisch Prize.—A prize of $20, offered by Mr. J. H. Redsecker, of Lebanon, Pa., for histological knowledge of drugs, was awarded to William Stair Weakley, with honorable mention of Melvin William Bamford, Alfred Heineberg, John Allen McFall, Otto William Osterlund, Charles Ellwood Rupert Smith and Peter Stang.

Operative Pharmacy.—A prize of $20 in gold, by Prof. Joseph P. Remington, for the best examination in operative pharmacy was awarded to Melvin William Bamford, with honorable mention of Henry Curtis, Samuel Bond Davis, William Patrick Grady, Alfred Heineberg, Robert John Hoagland, Quintus Hoch, David Evans Jenkins, Frederick Glick Keiser, Lucien Scott Kemp, David Edwards Nicklas, Otto William Osterlund, Dell Noblit Ross, Orville Ludwig Shirey, Robert Grafton Shoults, Clarence Leslie Sipes, James Wilbur VanDyke and Katherine Powell West.

Theoretical Pharmacy.—A prize of a fine Troemner agate prescription balance offered by Mr. Mahlon N. Kline, of Philadelphia, for the best examination in theory and practice of pharmacy, was awarded to Richard Levis Fishburne.

The Robinson Chemical Prize.—A gold medal and certificate, offered by Mr. James S. Robinson, of Memphis, Tenn., for the best examination in general and analytical chemistry, was awarded to Alfred Heineberg, with honorable mention of Melvin William Bamford.

The valedictory address to the graduating class was delivered by Prof. Clement B. Lowe.

COMPLIMENTARY SUPPER.

The Professors' farewell supper to the graduates was given on Tuesday evening, April 18th, in the Museum of the College. Many of the officers and Trustees of the College were present, as also other invited guests. The supper having been served, the remainder of the evening was devoted to toast-making, Professor Remington, Dean of the Faculty, acting as master of ceremonies. Mr. Bullock, President of the College, responded to the toast "Philadelphia College of Pharmacy." He referred to the fact that it was fifty-two years since he graduated from this College, and that the growth of the institution since that time was remarkable. He also remarked that the results of the recent examinations showed that it was wise to extend the course to three years. James T. Shinn, Treasurer of the College, spoke on the subject "The Faculty," and referred to many interesting reminiscences in speaking of those

who had held Professorships in the institution. J. H. Redsecker and M. N. Kline, in their usual happy manner, made entertaining and profitable remarks. Short addresses were made by the Faculty, students and some others who were present.

ALUMNI ASSOCIATION.

The thirty-fifth annual meeting of the Alumni Association was held in Alumni Hall on Monday afternoon, April 17th, with the President, James C. Perry, in the chair.

Following the annual address of the President, in which a number of recommendations were made relative to the interests of the Association, reports from the Treasurer and Secretary were read, the latter being to the effect that 122 new members had been enrolled, making an increase of 101 during the year. The number of deceased members reported for the same period was 21, making the total number of alumni 2,940. Reports were also received from the several standing committees of the Association.

After the reports had been considered, the election of officers for the ensuing year was held, and resulted as follows:

President, F. Wm. E. Stedem, '82; First Vice-President, Theo. Campbell, '93; Second Vice-President, Cornelius E. Spenceley, '78; Treasurer, Wm. Lincoln Cliffe, '84; Secretary, Wm. E. Krewson, '69; Corresponding Secretary, John H. Hahn, '81; Board of Directors, for three years, John D. Burg, '86; Frank P. Streeper, '88; Fred. W. Haussmann, '90, and Walter A. Rumsey, '84; for unexpired term of Henry Trimble, deceased, Albert Oetinger, '86.

The thirty-fifth annual reception of the Association to the seventy-eighth graduating class was tendered on the evening of the same day in the College Museum. The music for the reception was furnished by McKinney's Orchestra.

Introductory remarks having been made by the President, James C. Perry, the Secretary, Wm. E. Krewson, called the roll of members elected during 1898–99.

An address to new members was then delivered by Mahlon N. Kline.

The several prizes offered by the Association were then presented as follows:

The Alumni gold medal to the member of the graduating class receiving the highest general average was awarded to Melvin William Bamford, the presentation being made by the President, James C. Perry.

The Alumni prize certificates to the members of the class receiving the highest averages in each of the branches were awarded as follows, Dr. A. W. Miller making the presentation:

Materia Medica, Charles Ellwood Rupert Smith, of Philadelphia.

Pharmacy, Richard Levis Fishburne, of Lock Haven, Pa.

Chemistry, Charles John Harvey, of Butler, Pa.

General Pharmacy, Alfred Heineberg, of Selma, Ala.

Operative Pharmacy, Melvin William Bamford, of Reading, Pa.

Analytical Chemistry, Peter Stang, of Philadelphia.

Pharmacognosy, William Stair Weakley, of York, Pa.

The Alumni silver medal for the best general average in the second year examination was awarded to Harry Lionel Meredith, of Hagerstown, Md., the presentation being made by F. W. E. Stedem.

The Alumni bronze medal was awarded to Lionel Gilliland Skillman, of

Philadelphia, for the best general average in the first year examination, and was presented by Theodore Campbell.

The class oration was delivered by Wm. Allen Chamberlin, of Indianapolis, Ind.; the poem by Robert Hoagland, of Peoria, Ill.; the history by Arthur Bowles Fleming, of Chambersburg, Pa.; and the prophecy by Christopher Koch, Jr., of Philadelphia, Pa.

EXAMINATION QUESTIONS.

The following is a copy of the questions given to the students of the third class at the recent examination. Those in operative pharmacy and analytical chemistry were practical and conducted in the respective laboratories; the others were written.

THEORY AND PRACTICE OF PHARMACY.

A—(1) How much quinine, strychnine and ferric phosphate would be required to make a litre of Tonic Elixir so that each teaspoonful would contain $\frac{1}{100}$ grain of Strychnine, 1 grain of Quinine and 2 grains of Ferric Phosphate? (2) How much of each ingredient would be required to make 10 wine gallons of the Tonic Elixir? (3) If Quinine cost 30 cents per ounce, Strychnine, $1.50 per ounce, Ferric Phosphate, 80 cents per pound, and Simple Elixir, 30 cents per gallon, at what price would the 10 gallons of Elixir Tonic have to be sold, to net a profit of 30 per cent.—labor and any other expenses not being considered?

B—Give the unabbreviated official or Latin name, ingredients, brief outline of process, and describe the appearance of the following: Prussic Acid, Lugol's Solution, Labarraque's Solution, Solidified Copaiba, Basham's Mixture, Brown Mixture, Blaud's Pills and Cold Cream.

C—Give English name, ingredients, brief outline of process, and describe the appearance of the following: Liquor Plumbi Subacetatis, Liquor Acidi Arsenosi, Syrupus Tolutanus, Sapo Mollis, Tinctura Aconiti, Piluli Phosphori, and Unguentum Diachylon.

D—(1) What is Tincture of Deodorized Opium? (2) How is it prepared? (3) What are its uses and advantages? (4) How may preparations of opium be recognized by chemical tests? Give the color tests for the following: (5) Colchicine. (6) Strychnine. (7) Veratrine. (8) Brucine.

E—(1) How is Cod-Liver Oil prepared? (2) What are its medical properties? (3) What kinds are found in commerce? (4) State the precautions necessary in preserving the oil. (5) Name the usual impurities. (6) How is it best administered? (7) Write out a formula for the best method that you know of for giving Cod-Liver Oil.

F—(1) Name the parts composing a model prescription. (2) Write out a model prescription indicating each part. (3) How should unusual doses in prescriptions be designated? (4) Give five illustrations of faulty abbreviations in writing prescriptions, and state the reasons for avoiding such faults.

G—(1) How are "hard" and "soft" gelatin capsules containing oils made (2) How are "pearls" made? (3) In filling empty capsules, how do you determine whether to use the ingredients in powder or mass? (4) What are the advantages and objections in using either the powder or mass form?

H—(1) What is the object of pharmaceutical legislation? (2) What is a Board of Pharmacy? (3) What are the duties of the members in your State? (4) What two classes of certificates are issued to licentiates? (5) Why is

there not a United States Pharmacy Law? (6) Why are there not more prosecutions in the various States for violating the statutes on adulteration?

J—Criticise and translate the following: Write out with English names the ingredients and quantities. State how you would compound them or what course you would pursue.

℞	Tr. Cinchona Comp.	℥ iss
	Ext. Nux	ʒ iii
	Tr. Gent. Comp. Qs ad.	ʒ iv
℞	Bromid Stronti	ʒ v
	Carbu. Ligni Pulv.	ʒ i
	Hayden's Vib. Co.	℥ ss
	Tinct. Ignat	ʒ ij
	Essen Pepsin. ad	℥ ij
M. ft. Sol.		
℞	Bromalhydrat	5·0
	Hyoscyn. Hydrobr.	0·006
	Extr. Fab. Cal.	0·30
	Resin Gelsem.	1·0
	Acid Sclerotin	1·0
	Extr. Valer.	5·0
Qu. arab. q. S. ut. f. lege art Pil 50.		
D. S. physicians use only.		

K—Criticise and translate the following: Write out with English names the ingredients and quantities. State how you would compound them.

℞	Quinin Sulph.	gr. lxviii
	Liq. Potass.	℥ ss
	Elix. Calisaya q. s. ad.	℥ iv
℞	Sodii Bicarb.	ʒ iiss
	Potas. Sulphid	ʒ ij
	Sodii Chlorid	ʒ ss
	Pulv. Alumen	gr. x
	Aquæ	℥ iv
℞	Syr. Senega.	f℥ i
	Ext. Pruni Vir.	f℥ i
	Vin Antimon.	f℥ ss
	Ammon. Chlor.	ʒ i
	Aqua font. q. s.	f℥ iv

CHEMISTRY.

A—(1) Write the formula of official Alcohol and illustrate by reactions the action of sulphuric acid upon it under different conditions. What are the final products of these reactions? (2) Illustrate by reactions the several steps in the action of oxidizing agents upon Alcohol. Name the products of such action. (3) Illustrate by a reaction the action of a haloid acid upon Alcohol and name the product.

B—(1) Give the chemical formula of Formaldehyde and state how it is made. (2) What are some of the pharmaceutical, medical and technical uses of Formaldehyde? (3) By what tests would you show its presence in a liquid?

C—(1) What is the proper chemical name of Acetone? Describe it and state how it is made. (2) Write the reaction for the production of Chloroform from acetone. (3) What are the effects of oxidizing and reducing agents, respectively, upon Acetone?

D—(1) What is an Ester? Give the formula of an official Ester of an inorganic acid; of an organic acid. (2) What is meant by saponifying an Ester? Illustrate by a reaction, naming the products obtained. Name some official organic acids, both solid and liquid, which are obtained by the decomposition of naturally occurring Esters.

E—(1) Enumerate the several groups into which the class of carbohydrates is divided; give the distinctive reactions for each of these classes. (2) What is the formula of Dextrin? How is it made? How do you distinguish it, analytically, from starch? (3) State the several chemical reactions involved in the production of an alcoholic spirit from a cereal, like corn.

F—(1) State what isomers may be formed by the action of chlorine upon toluene and illustrate the difference by graphic formulas. (2) Write the reaction for the synthesis of Benzaldehyde, stating how it is carried out practically. (3) Write the formulas for Diphenylamine and Metaphenylenediamine, respectively.

G—(1) Write the graphic formulas of α- and β-Naphthol, respectively. (2) What nitrogenous basic substances are found corresponding in formulas to Benzine, Naphthalene and Anthracene, respectively. (3) Illustrate the correspondence by the graphic formulas of these substances.

H—(1) To what class of compounds does Oleum Terebinthinæ belong? (2) State the appearance and properties of the purified official preparation and of the crude material from which it is extracted. (3) State the chemical differences between Oleo-resins, Gum-resins and Balsams.

J—(1) Describe the general procedure in examining for alkaloidal poisoning. (2) What is a Ptomaine? To what class of chemical compounds do most of them belong?

K—(1) What salts of Mercury are poisonous? By what tests would you establish the fact of mercurial poisoning? (2) What is the antidote to be administered in case corrosive sublimate had been used? (3) What are the symptoms of chronic lead poisoning? What is the antidote for lead poisoning, whether acute or chronic?

MATERIA MEDICA.

A—Opium.—(1) Give the pharmacopœial definition of Opium. (2) From what tissue and part of the plant is Opium derived and how is it collected? (3) In what three forms is Opium official and what should be the morphine strength of each? (4) What peculiar acid is present, and what is the test for its presence? (5) State the maximum dose of morphine by the mouth, the rectum and hypodermically. (6) What effect has Opium upon the pupil of the eye and what are drugs called which act in this way? (7) Name a drug having an opposite effect upon the pupil and the class of drugs to which it belongs.

B—Coniferæ.—(1) Name two official oleoresins yielded by trees belonging

to this order. (2) State briefly the manner of their collection and describe their physical appearance. (3) Give the official name of the volatile oil obtained from one of them; also the official name of the residue left in the still. (4) Name the class of volatile oils to which this oil belongs and give its formula. (5) State the effect of this oil upon the kidneys and the bronchia when taken internally, and the effect upon the skin when taken externally.

C—Benzoinum.—(1) Give the name of the plant yielding Benzoin, its natural order and habitat. (2) What is the manner of its collection and by what three names are the different qualities known? (3) What two commercial varieties are seen in the market and what is the difference between them in color and odor? (4) Name its principal constituents. (5) Which of these can be prepared artificially from toluol or from hippuric acid? (6) When thus prepared how is it treated to give it the characteristic odor? (7) What are the medical properties of Benzoin and what action do the benzoates have upon alkaline urine?

D—Glucosides.—(1) Of what compounds is commercial Digitalin a mixture? (2) What is the dose of commercial Digitalin and of the crystallized Digitalin? (3) What effect has Digitalis upon the heart, arterial pressure and kidneys? (4) What diuretic glucosides are contained in many of the Ericaceæ? (5) Which of these is decomposed in the body into hydroquinone and what is the action of the latter? (6) Name the poisonous principle present in some of the Ericaceæ. (7) Name the poisonous neutral principle yielded by the flowers of Artemisia pauciflora and state its dose and action. (8) Why should it not be prescribed with an alkali?

E—Elaterium.—(1) Give the botanical origin, natural order and habitat of the plant from which it is obtained. (2) What is the manner of its production? (3) What amount of elaterium should it yield, and what is its best solvent? (4) What adulterations are sometimes present, and how may they be detected? (5) What is the dose of elaterin, and its action upon the gastro-intestinal tract?

F—Oleaceæ.—(1) Name the official drug yielded by Fraxinus Ornus, and state the manner of its production. (2) What are the commercial varieties? (3) What is its chief constituent, and what per cent. is present in the best varieties? (4) What are its medical properties and dose? (5) Name the drug obtained from Olea Europæa, and state the manner of its production. (6) Explain the changes which it undergoes in the intestinal tract previous to absorption.

G—Camphora.—(1) Give the name of the plant yielding official camphor, its natural order and habitat. (2) What is its official definition? (3) State briefly the manner of its production and method of refining. (4) What is its physical appearance, its behavior to solvents and how can it be powdered? (5) What allied product is obtained from Borneo? (6) State the dose of camphor and its effect upon the cerebrum.

H—Alkaloids.—(1) Name an alkaloid (and the leaf yielding it) which is a powerful sialogogue and diaphoretic. (2) Name the salt of this alkaloid which is official and its dose by the mouth and hypodermically. (3) Name an alkaloid (and the leaf yielding it) which is a local anesthetic. (4) Name an alkaloid derived from a seed of Loganiaceæ which is a powerful respiratory, cardiac and vaso-motor stimulant, and give its maximum dose. (5) Name three alkaloidal salts derived from a bark drug of Rubiaceæ, and state their medical properties. (6) Name three official salts derived from Solanaceæ, and state the dose of each.

J—Doses, etc.—State the best times and methods of administering the following, and the doses in which they should be given: (1) Castor Oil. (2) Croton Oil. (3) Cod-Liver Oil. (4) Potassium Permanganate. (5) Silver Oxide. (6) Pepsin. (7) Pancreatin. (8) Iodides. (9) Bismuth Salts (as gastric sedatives). (10) Sulphonal.

K—Botanical Names.—Give the botanical names of the plants yielding the following: (1) Thebaine. (2) Glycyrrhizin. (3) Kino-tannic Acid. (4) Arabic Acid. (5) Scammonin. (6) Mastichic Acid. (7) Styrol. (8) Guaiacic Acid. (9) Gambogic Acid. (10) Catechu-tannic Acid.

COMMITTEE.

A—(1) An apothecary has two lots of Powdered Opium of the respective morphine strengths of 11 per cent. and 15 per cent. How much of each must he take to make 5,000 c.c. of official Tincture of Opium, if he desires to use Powdered Opium of the average morphine strength of the Pharmacopœia? (2) How many c.c. of Camphorated Tincture of Opium would an equal weight of official Powdered Opium make? (3) About how much official Extract of Opium could be made from the same weight of Powdered Opium?

B—Iron.—(1) Give its Latin name and symbol. (2) In what forms is Iron found in nature? (3) What forms are officially used? (4) How many classes of compounds does Iron form? Give the valence of each. (5) How is Reduced Iron made? (6) How is Vallet's Mass made? (7) How is Solution of Ferric Chloride made?

C—(1) Write the official names of three important drugs of South American origin, and name an important medicinal constituent of each. (2) Name an official bitter-tonic drug that is destitute of tannin and whose fluid preparations, therefore, do not form a precipitate with ferric solutions. (3) Name two official barks distinguished from all others by being colored a deep-red by solution of one of the caustic alkalies. (4) Name three official root-drugs which are destitute of starch. (5) Write the official names of two root-drugs which yield pectin, and state how precipitation may be avoided in their galenical preparations.

D—Aconite.—(1) Give its official name. (2) Botanical origin. (3) Natural order. (4) Habitat. (5) Describe Aconite. (6) Name its official preparations and give brief outlines of the formula for each. (7) What is the active constituent of Aconite, and give its physical test. (8) Give the dose of the active constituent. (9) How would you treat poisoning by Aconite if compelled to act in an emergency?

E—(1) What is Tannin? (2) From what source is it usually obtained? (3) Give its official name. (4) What is its chemical relation to Gallic Acid? (5) What are the best solvents for Tannin? (6) How may Tannin be chemically identified? (7) What are the pharmaceutical difficulties in preserving galenical preparations of drugs containing Tannin? (8) Name ten official drugs containing Tannin in one or the other of its forms.

F—(1) Explain the theory of emulsification. (2) Describe the "English" and "Continental" methods of making emulsions. (3) How are emulsions made on a large scale? (4) How would you know when you had succeeded in making a good emulsion? (5) Why do such drugs as Myrrh, Asafetida, etc., not require acacia to make good emulsions? (6) What is Quillaja? How can

emulsions be made from its preparations? What are the objections to its use?

G—Pharmacognosy.—(1) What are the reserve materials in flaxseed? (2) In what part of the seed is the mucilage contained? (3) What per cent. of oil should ground flaxseed contain? (4) What microscopical test can be made to determine quickly if the oil has been removed? (5) Name a common adulterant of ground flaxseed.

H—Criticise and translate the following prescriptions, write out with names and ingredients with quantities, state whether you would compound them as written, whether chemical or other change or action occurs, if so, describe it, what course would you pursue on receiving them?

℞	Sodii Salicylas.	℥i
	Quin Bisulph.	1 gr. xx
	Syrup	
	Aq. Menth. q. s. ad.	f ℥iv
℞	Sod. Salicyl.	℥i
	Phenazon.	℥ss
Fiat Chart. No. xv		
℞	Pulv. Opii.	gr. v
	Linoleum.	℥ ss
	Ext. Bellad.	gr. ij
Ft. Unguent. sec. art.		

I—Give the English name, botanical name of the plant, natural order, habitat and active principles of the following drugs: Pareira, Capsicum, Hyoscyamus, Santonica and Melissa.

K—Criticize the following prescriptions, write out with English names, ingredients and quantities, state whether you would compound them as written, whether chemical change or action occurs, if so, describe it, what course would you pursue on receiving them?

℞	Potas. Permang.	℥i
	Glycerin.	
q. s. ft. mass et div. in pil. no. xx		
℞	Potas Iodid.	℥ i
	Syr. Fer. Iod.	f ℥ ss
	Syr. Aurant Flor.	f ℥ iiiss
Ft. Solutio.		
℞	Acid Carbolic.	gr. xxv
	Sod. Bicarb.	
	Sod. Borat. āā	℥i.
	Glycerin.	f ℥ i
	Aqua ad.	f ℥ iv
Ft. Solutio.		

The following specimens were placed before each of the members of the class for recognition:

Pharmacy.	*Chemistry.*
(1) Hydrargyrum cum creta,	(1) Aqua chlori,
(2) Petrolatum molle,	(2) Potassii bitartras,

(3) Pulvis glycyrrhizæ compositus,
(4) Aqua amygdalæ amaræ,
(5) Æther aceticus,
(6) Glycerinum,
(7) Liminentum chloroformi,
(8) Tinctura benzoini,
(9) Liquor ferri chloridi,
(10) Extractum cinchonæ fluidum.

(3) Potassii nitras,
(4) Potassii bicarbonas,
(5) Acidum boricum,
(6) Alumen,
(7) Potassii bromidum,
(8) Zinci acetas,
(9) Acidum tartaricum,
(10) Acidum sulphurosum.

Pharmacognosy.

(1) Carthamus or safflower,
(2) Belladonnæ folia,
(3) Sarsaparilla (Honduras),
(4) Strophanthus,
(5) Rhamnus purshiana,
(6) Granatum,
(7) Digitalis,
(8) Conium,
(9) Belladonnæ radix,
(10) Aconitum.

Committee.

(1) Syrupus tolutanus,
(2) Spiritus juniperi compositus,
(3) Tinctura calumbæ,
(4) Extractum sennæ fluidum,
(5) Antimonii sulphidum,
(6) Potassii chloras,
(7) Ammonii chloridum,
(8) Xanthoxylum,
(9) Eriodictyon,
(10) Cannabis Indica.

OPERATIVE PHARMACY.

(1) *Powders.*

Cinchonine Sulphate . . . . . 5 grammes.
Glycyrrhiza Powd. . . . . 1 gramme.
Mix; make 12 powders.

(2) *Troches.*

Potassium Chlorate . . . . . 6 grammes.
Sugar, Powd. . . . . 24· "
Tragacanth, Powd. . . . . 1·2 "
Mix; make 20 troches.

(3) *Ointment.*

Mercury . . . . . 2·5 grammes.
Nitric Acid . . . . . 3 c.c.
Nitric Acid . . . . . 2 "
Lard Oil . . . . . 30 "
Make Ointment of Mercuric Nitrate.

(4) *Suppositories.*

Glycerin . . . . . 8· c.c.
Sodium Carbonate . . . . . 0·50 "
Stearic Acid . . . . . 0·85 gramme.
Make six suppositories and put them in a small, wide-mouth bottle.

(5) *Mixture.*

Make a mixture, secundem artem, containing 20 per cent. by volume each of tincture of Guaiac and Glycerin, and sufficient Water to make 120 c.c. Write a separate label, noting the contents of the bottle, and attach it.

QUANTITATIVE ANALYSIS.

Atomic Weights.—Ag 107·66, Br 79·76, C 11·97, Cl 35·37, H 1·0, K 39·03, N 14·01, Na 23·0, O 15·96, S 31·98.

A—(1) Give an outline of the gravimetric analysis of magnesium sulphate for magnesium oxide, sulphur trioxide and water of crystallization, mentioning the chemical formulas for the precipitates produced and for the substances weighed at the end. (2) Outline the calculations by which you would compute the percentage amount of each constituent found.

B—(1) Describe the gravimetric estimation of sodium hypophosphite which you made during this term. (2) Write equations for the reactions involved. (3) How many molecules of sodium hypophosphite are indicated by one molecule of the substance from whose weight the result was calculated?

C—(1) Show upon your paper the means which you take to find how much absolute acetic acid 1 c.c. of $\frac{N}{1}$KOH, V. S. will neutralize. (2) 5·986 grammes of a sample of acetic acid requires 36 c.c. of $\frac{N}{1}$ KOH, V. S. to neutralize it. Explain why each c.c. of the V. S. used corresponds to 1 per cent. of absolute acetic acid. (3) How many grammes of absolute acid are present in one litre of the preceding sample, if the specific gravity of the liquid is 1·048? (4) How many cubic centimetres of $\frac{N}{1}$KOH, V. S. will be needed to neutralize 1 kilogramme of acetic acid containing 36 per cent. of the absolute acid? (5) How many grammes of absolute acetic acid will this same volume of $\frac{N}{1}$KOH, V. S. neutralize? (6) A sample of acetic acid has a specific gravity of 1·048 and contains 36 per cent. of absolute acetic acid, how many cubic centimetres of the sample will be needed to neutralize 20 c.c. of $\frac{N}{1}$ KOH, V. S.?

D—Give the successive steps in the volumetric estimation of potassium bitartrate by means of $\frac{N}{1}$ oxalic acid, V. S., using phenolphtalein as indicator.

E—(1) How many grammes of pure $Na_2S_2O_35H_2O$ are used to make one litre of $\frac{N}{10}$ V. S.? (2) Explain why this quantity is used. (3) What indicator is employed with this V. S.? (4) Tell how the indicator behaves. (5) Name the four official substances which you estimated with this V. S. during the term. (6) Tell how each was prepared for titration. (7) Name an official substance in the estimation of which by residual titration you employed this V. S. (8) Name the other reagents employed in this same estimation.

F—A dry sample of potassium bromide contains potassium chloride. 0·500 gramme of the sample requires 43 c.c. of $\frac{N}{1}$ $AgNO_3$, V. S. for complete precipitation, what per cent. of potassium chloride is present?

G—Give an outline of the official method of assaying opium, telling the uses of the materials, the substance weighed at the end of the process and showing the calculation of the result into percentage of the drug.

H—Describe the official method of estimating nitrites. (2) Explain the reactions involved in the estimation of spirit of nitrous ether. (3) Outline the calculations used in finding the percentage amount of the important constituent of this substance.

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, April 11, 1899.

The regular monthly Pharmaceutical Meeting was held in the Museum of the College, with David H. Ross in the chair.

There being no corrections, the minutes of the previous meeting were allowed to stand as published.

The presentation of papers next occupied the attention of the meeting, the first one being a short communication on "Syrup of Hydriodic Acid," by Edwin H. Wells, of Boston, which was read by Prof. F. G. Ryan. It was as follows:

"Much trouble with syrup of hydriodic acid has been experienced from the fact that, as ordinarily prepared, it is quite liable to become colored.

"This color has sometimes, doubtless, been due to liberation of iodine, but in the writer's experience, this is not always true, by any means.

"In most cases it seems to result from the action of the acid on impurities (coloring matter and ultramarine) contained in the sugar or on the sugar itself; the same difficulty being met with in other acid syrups, such as syrup calcium lactophosphate.

"Syrup hydriodic acid prepared from pure materials by the U.S.P. process, but using a light syrup (650 grammes to make 1 litre) made from pure white rock candy crystals, has been kept without change for months in partly filled bottles exposed to light and with occasional opening.

"Heat, however, causes the syrup to acquire color, and it should not, therefore, be kept in a warm place.

"When heavy syrup is employed, a white crystalline deposit sometimes occurs which does not appear when a thin syrup is used, but allowance must be made for the difference in percentage of acid by weight in the latter case.

"It seems to be mostly a question of purity of ingredients and syrup hydriodic acid carefully prepared from pure materials is perfectly colorless and limpid, and a permanent and satisfactory preparation."

In discussing this subject, Prof. Ryan thought that the most important statements of the author had been covered by Mr. F. W. Haussmann in a paper which appeared in the March issue of this JOURNAL, although he thought that every one would admit that the author's views were well taken.

Under the heading "Notes on Materia Medica," Prof. C. B. Lowe presented some criticisms on the 1890 U. S. Pharmacopœia. The author's remarks were confined to the official vegetable drugs and included suggestions for the more accurate description of some of these drugs, the dismissal of others on the ground of their being little used, and the admission of species which have here-

tofore not been recognized in giving the botanical origin of certain vegetable drugs.

Professor Ryan did not wholly accord with the author's remarks concerning the dismissal of Apocynum from the Pharmacopœia, and said that while the drug may be used very little in some localities, it is used to a considerable extent in Ohio and Indiana and some other States, and he, therefore, thought that a very broad view of the subject should be taken when discussing questions pertaining to the use of the drugs of the Pharmacopœia.

Prof. Joseph P. Remington was the next speaker and read a paper on "Syrupus Pruni Virginianæ (Acetous)" (see page 209). Samples of the syrup and of the fluid acetract of wild cherry accompanied the paper.

Mr. Haussmann wished to know the object in directing 150 c.c. of glycerin in the official formula for this syrup, as he found it to keep very well with a less quantity of glycerin. Then, remarking on the quality of the wild cherry bark of the market, he said that he had experienced considerable difficulty in obtaining the drug of uniform quality and believed that the trouble was due to the bark having been collected in the spring and summer rather than in the fall of the year.

Prof. Remington in reply said that the use of glycerin had been two-fold—to hold the tannin in solution and to prevent precipitation. He believed that many of the fluid extracts and syrups of the Pharmacopœia would be improved by placing the glycerin in the receiving vessel rather than by adding it to the menstruum as now directed. The speaker then referred to the experiments of Professor Procter, in 1856, with the fluid extract of wild cherry and said that this preparation had always given more trouble than any of the other preparations of its class. He, therefore, suggested adding the glycerin to the bottle receiving the percolate, rather than to the menstruum, as a means of improving the fluid extract.

Prof. F. X. Moerk, having made assays of the dilute acetic acid infusion and of the aqueous infusion directed by the Pharmacopœia for the syrup of wild cherry, found that the percentage of hydrocyanic acid was about parallel in the two cases, or, if anything, slightly in favor of the acetic infusion, thus showing that the acetic acid had had no injurious effect.

F. W. Haussmann read a paper incorporating an improved formula for "Syrupus Rhei," which will be published in a subsequent issue of this JOURNAL.

Referring to the formula proposed by the author and to his suggestion to filter the mixture of fluid extract and water before dissolving the sugar in it, Mr. Geo. M. Beringer wished to know whether he had experienced any difficulty in filtering the mixture. In reply, Mr. Haussmann said that he had had no trouble with the official fluid extract, but that the same could not be said of the non-official product.

Mr. F. W. E. Stedem related an experience of his, which likewise showed that there is considerable variation in some, at least, of the fluid extracts on the market.

These remarks brought up the question of making infusions, syrups, etc., from fluid extracts. Professor Remington did not favor this practice, and to illustrate his view said that while fresh fluid extract of wild cherry contains the desired amount of hydrocyanic acid, an old fluid extract does not contain

any of the acid, or very little, and hence a syrup made from such a fluid extract does not possess the value that it otherwise would.

Mr. Beringer, while holding in part the same view, said that the practice of making other preparations from fluid extracts was very extensive. He said that syrup of tolu was made almost universally from the liquid tolu. To illustrate further, he said that a few years ago he started putting upon the market a line of fluid extracts without giving formulas for making syrups, etc. The demand for the formulas was so great, that in the end he was obliged to attach new labels, giving the desired formulas.

A note on "Tinctura Opii Deodorata cum Camphoræ," by Thos. S. Wiegand, was as follows: "The tonic effect of opium upon some individuals is as well known as its remedial effect upon the ordinary sufferer. And it is also true, in many instances, that paregoric is not injurious or annoying to persons who cannot take opium in any other form. In view of this fact, the following formula for an improved paregoric is presented:

Opii pulvis	℥i
Ætheris	f℥iv

"Macerate the opium two days in an ounce of the ether in a close vessel and then percolate with ether until the percolate is nearly colorless, and a few drops evaporated leave no opium odor; evaporate the percolate to ½ fluid ounce, add to 1 pint of water and expose it to a gentle heat until all ethereal odor is removed; then dissolve in an ounce of alcohol: 1 drachm of benzoic acid and 1 drachm of oil of anise and 40 grains of camphor, to this add 12 fluid ounces of alcohol, mix with the aqueous solution of opium and then add alcohol sufficient to make 2 pints—permit it to stand twenty-four hours, with frequent shaking and filter."

A number of interesting specimens were exhibited, as follows: A sample of a new coca base termed by Dr. Schaefer, chemist of the New York Quinine and Chemical Works, "cocainidine." Mr. P. Samuel Stout, a student of the College, directed attention to quite a novelty in the way of a clothes-brush. The wood from which the brush was made was sawed from the trunk of a tree which is said to have stood in an ancient forest adjacent to what is now the northern limit of Chicago. This ancient forest is supposed to have been swept into an inland lake, which formerly occupied the present site of Chicago, by a powerful wind storm, and the lake having been filled by driftwood, sand, silt, etc., during the succeeding ages, the remains of the aforesaid forest were completely buried or hermetically sealed. There is evidence that this forest belonged to the vegetation which appeared soon after the glacial period, and so it is estimated that the wood from which the brush was made is 7,000 years old. The brush is the property of the Hon. Joseph M. Gazzam, of this city, and the wood from which it was made was collected by Mr. Ossian Guthrie, the eminent Chicago geologist.

Among the other specimens presented were several cocoanuts still in the partly green condition and attached to the branch on which they grew, which were grown in Jamaica, and were received from the India Refining Company, of this city. Mr. H. N. Rittenhouse presented some licorice root, grown in California, which was said to be quite rich in glycyrrhizin. Attention was directed to the flower of a calla, which showed a rather unusual development in that it possessed a double spathe. On motion, the meeting adjourned.

FLORENCE YAPLE, *Secretary pro tem.*